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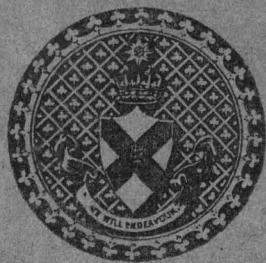
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A LIST OF THE NEUROPTERA OF  
IRELAND



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## II.

### A LIST OF THE NEUROPTERA OF IRELAND.

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(BEING THE EIGHTH REPORT FROM THE FAUNA AND FLORA COMMITTEE.)

(COMMUNICATED BY PROF. G. H. CARPENTER, B.SC.)

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#### INTRODUCTION.

IT is now more than twenty years since one of us issued the first general list of Irish Neuroptera.<sup>1</sup>

This catalogue contained records of some 211 species, comprising Dragon-flies, May-flies, Stone-flies, Psocids, Planipennia, and Caddis-flies. It was largely the result of original work, as comparatively little had been previously known concerning the occurrence of these interesting insects in Ireland.

Since then several additional species (see page 31) have been observed which did not find a place in the old list. Many changes of nomenclature and arrangement are necessary in order to bring the Irish records into line with recent work on the Neuroptera. At the same time, our knowledge of the distribution of the great majority of the species has been considerably extended. It is hoped that the present list, including all the previous records, will form a useful standard of reference for future observers of Irish neuropterous insects.

It is to be regretted that the study of the Neuroptera has been greatly neglected in this country. Indeed we have had no resident collectors either in the south or west of Ireland, so that our knowledge of the fauna of those parts which we should expect to be the most interesting is almost entirely due to the excursions carried out from time to time by a few enthusiastic entomologists.

It is therefore not surprising that records of Neuroptera are distributed in a very unequal manner in Ireland. In order to show what has been done, we have prepared a list (page 37), giving the various localities, under the thirty-two Irish counties, where collecting has been carried on. In not more

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<sup>1</sup> A full bibliography of papers and notes referring to Irish neuropterous insects will be found on pages 39-42.

than six or seven of the counties is the neuropterous fauna tolerably well known; for it should be pointed out that in many places only a few species were collected. It will be seen that extensive tracts of country in all of the four provinces are practically unexplored; while from the counties of Longford, Meath, Leitrim, and especially Cavan, with its extensive chain of lakes, no records are forthcoming.

The late A. H. Haliday formed a collection of local Neuroptera; and a manuscript "Catalogue of Irish Insects," which he compiled, gives a fair idea of what was known of the Irish species in his time. This distinguished entomologist, however, did not devote as much attention to the Neuroptera as he did to other orders of insects; otherwise there would certainly have been a more satisfactory basis to work on when the preparation of an Irish list was undertaken more than twenty years ago. Many of the species in the Haliday catalogue are recorded with reserve, and very few exact localities are mentioned; yet it was the means of supplying useful information relating to the capture of such uncommon insects as *Gomphus vulgatissimus*, *Erythromma najas*, and *Chrysops abbreviata*, which have not been observed in this country since Haliday's time. This manuscript catalogue is now preserved in the library of the Irish National Museum.

It seems desirable to refer briefly to some of the changes and additions which it has been found necessary to carry out in the present list.

Although our knowledge of the native Dragon-flies is far from complete, there can be no doubt that the Irish fauna is much poorer in these insects than is that of Great Britain. Twenty-five species were included in the Irish list of 1889: it would appear, however, that one of these, *Orthetrum cancellatum*, was certainly included in error. A second species, *Cordulia aenea*, said to have been taken many years ago at Killarney, is, in our opinion, more likely to have been *Somatochlora arctica*, which is known to occur in that locality; while a third species, *Lestes barbara*, remained for many years on the British list on the strength of a *supposed* Irish specimen seen by De Selys, as long ago as 1845, in the Dublin University Museum. No trace of this specimen is now to be found; and the record must be regarded as extremely doubtful. Allowing for these changes, there are reliable records of twenty-three species of Dragon-flies in this country, including *Libellula fulva*, an Irish example of which has recently been brought to light in the collection of the late C. W. Dale.

The Ephemeridae (May-flies) have been much neglected, so that there are few changes to record. The recent finding of the northern form *Leptophlebia vespertina* in the west of Ireland may be referred to as the only unrecorded species observed since 1889.

It has been found necessary to thoroughly revise the species of Perlidae (Stone-flies) in the light of the recent researches of Morton, Kempny, and others. We hope the present short list, containing several additional species, will serve as an accurate basis for future work in this country.

In the group Planipennia (Alder-flies, &c.), eight species have been added to the Irish list. Undoubtedly the most notable discovery is that of *Psectra diptera* in County Wexford, an insect of great rarity in the Britannic area, where it is now known to have been found in three localities; and it seems almost equally rare both in Europe and America. The apparent absence from Ireland of certain conspicuous British insects belonging to this group is noteworthy; we may refer to the genera *Rhaphidia* (Snake-flies) and *Nothochrysa* as examples. Of interest, also, is the recent capture in County Cork of one of the Scorpion-flies, *Panorpa germanica*, the first recorded occurrence of these insects in Ireland.

Eleven species of Trichoptera (Caddis-flies), some of considerable rarity, have been added. There is little doubt that fresh discoveries await the assiduous collector of these interesting insects, especially amongst such small forms as are contained in the family Hydroptilidae.

For convenience of reference, we give here the names of the various species which have been added to, or deleted from, the 1889 list. They are as follows:—

- Libellula fulva* Müll.
- [*Orthetrum cancellatum* (L.). Deleted.]
- [*Cordulia aenea* (L.). Doubtfully native.]
- [*Lestes barbara* Fab. Doubtfully native.]
- Leptophlebia vespertina* L.
- Perla maxima* Scop.
- Perla cephalotes* Curt.
- Dictyopteryx Mortoni* Klap.
- [*Dictyopteryx microcephala* Pict. Deleted.]
- Dictyopteryx recta* Kempny.
- Isopteryx tripunctata* Scop.
- Isopteryx torrentium* Pict.
- [*Isopteryx Burmeisteri* Pict. Deleted.]
- Capnia atra* Morton.
- Taeniopteryx Risii* Morton.
- Nemoura praecox* Morton.
- Nemoura Meyeri* Pict.
- [*Nemoura lateralis* Pict. Deleted.]
- [*Nemoura humeralis* Pict. Deleted.]

*Leuctra Klapaleki Kempny.*  
 [Leuctra fusciventris Steph. Deleted.]  
*Leuctra hippopus Kempny.*  
*Leuctra inermis Kempny.*  
 [Leuctra nigra Klap. Deleted.]  
*Amphigerontia fasciata Fab.*  
*Psocus major Kolbe.*  
*Ectopsocus Briggsi McLach.*  
*Hyperetes guestfalicus Kolbe.*  
*Osmylus chrysops L.*  
*Psectra diptera Burm.*  
*Chrysopa tenella Sch.*  
*Chrysopa vulgaris Sch.*  
*Chrysopa prasina Ramb.*  
*Chrysopa ventralis Curt.*  
*Chrysopa abbreviata Curt.*  
*Panorpa germanica L.*  
*Grammotaulius atomarius Fab.*  
*Limnophilus decipiens Kol.*  
*Limnophilus fuscinervis Zett.*  
*Limnophilus nigriceps Zett.*  
*Anabolia nervosa (Leach) Curt.*  
*Chaetopteryx villosa Fab.*  
*Apatania Wallengreni McLach.*  
*Triaenodes conspersa Ramb.*  
*Adicella reducta McLach.*  
*Tinodes unicolor Pict.*  
*Ithytrichia lamellaris Eaton.*

The Irish Trichoptera are of special interest on account of the occurrence of at least four species which have not been so far observed in other parts of the Britannic area. These are *Limnophilus fuscinervis*, *Apatania fimbriata*, *Tinodes maculicornis*, and *Agapetus delicatulus*. It is not unlikely that the first-mentioned species will eventually be found inhabiting parts of northern Britain. The three remaining species have now been known from Ireland for more than twenty years, yet it would seem that no evidence of their occurrence in Great Britain is forthcoming. These species are interesting from a faunistic point of view. Notes on their distribution will be found in other parts of this paper.

We have endeavoured to give an outline of the geographical distribution

of each of the Irish species. The scarcity of records, however, more especially of the families Ephemeridae and Psocidae, not only in the British Isles, but throughout Europe, has rendered the ascertaining of this information difficult, so that in many cases the distributional notes are very imperfect. The statement that a species ranges from Devonshire to the Shetlands is not meant to imply that it occurs in all parts of Britain; indeed, in few cases are the records sufficient to justify such a conclusion. All that is meant to be conveyed is that the insect in question has been definitely recorded from these localities, and is at least widely distributed in the Britannic area.

In spite of the fact that much work remains to be accomplished, the poverty of the Irish fauna, as compared with that of Great Britain, is as manifest amongst the Neuroptera as it is in other groups of insects. It is evident that many conspicuous species and even genera of British Neuroptera are either absent from or of great rarity in this country. In order to show clearly the relative proportions of the two faunas, we have prepared a table giving the number of genera and species found in the two countries, as far as they are known at the present time. It will be seen that we have records of 239 species of Neuroptera in Ireland, or rather less than two-thirds of those recorded from Great Britain.

—	IRELAND.		GREAT BRITAIN.	
	Genera.	Species.	Genera.	Species.
ODONATA, . . .	15	23	20	42
EPHEMERIDAE, . . .	11	24	14	39
PERLIDAE, . . .	8	18	9	29
PSOCIDAE, . . .	14	30	21	43
PLANIPENNIA, . . .	9	31	14	56
TRICHOPTERA, . . .	48	114	61	175
	105	240	139	384

The deficiency in number of species is especially noticeable in the case of the Dragon-flies. It has already been pointed out that we possess only twenty-three of the forty-two species recorded from the Britannic area. It is of interest to note that the great majority of the nineteen British species which do not appear to have reached Ireland inhabit the

south and south-eastern parts of England; examples are *Anax imperator* and *Aeschna isosceles*. Abroad, many of these missing species are widely distributed; yet it is evident that the majority of them are found chiefly in the south of Europe, becoming decidedly rarer towards the north. At the same time it should be pointed out that there are in Ireland a few species which do not appear to have penetrated far into North Britain: we may refer to *Libellula depressa*, *Gomphus vulgatissimus*, *Brachytron pratense*, and *Lestes dryas*; naturally these range south in Ireland; and they appear to rank amongst the more local members of our fauna. Perhaps our most interesting native Dragon-fly is *Somatochlora arctica*, a northern and alpine insect, which occurs as far south as the Killarney district; while in Great Britain it is known to inhabit only certain heaths and swamps in the highlands of Perth and Inverness.

A rough analysis of the Irish Trichoptera (Caddis-flies), an order represented by all the characteristic distributional groups in the Irish fauna, may be of interest in this connexion, more especially as they are feeble fliers, aquatic during their early stages, and not subject to artificial introduction through the interference of man.<sup>1</sup> It should be remembered, however, that the analysis is only approximately accurate, as much remains to be found out concerning their distribution in Europe.

DISTRIBUTION IN EUROPE OF THE IRISH SPECIES OF TRICHOPTERA  
(CADDIS-FLIES).

Common and widely distributed forms,	.	.	60
Northern and parts of central Europe,	.	.	38
Central and southern Europe,	.	.	10
South-western Europe,	.	.	4
Alpine,	.	.	2
			114

As might be expected, the great majority of the Irish Trichoptera are widespread in the Palaearctic region. The large proportion, also, of northern and central forms is not surprising, seeing that the Trichoptera reach their greatest development in cold and temperate countries. Yet the preponderance of these forms amongst the more local species holds good in most groups, and seems a characteristic feature of the Irish fauna.

<sup>1</sup> An objection which might possibly be urged against other sections of the Neuroptera. In the Psocidae and Planipennia, for example, many of the species pass their lives on forest trees, especially conifers, and may occasionally be liable to introduction into fresh localities on this account.

Examples are *Phryganea obsoleta*, *Limnophilus fuscinervis*, and *Molanna palpata*. The central and southern species constitute a much smaller group; we may perhaps refer to *Adicella reducta*, and *Wormaldia mediana*. In so far as we can judge by their known range, it seems likely that at least four of our Irish Caddis-flies are south-western in Europe: namely, *Setodes argentipunctella*, *Tinodes maculicornis*, *Lype fragilis*, and *Agapetus delicatulus*; while *Polycentropus Kingi* should probably also be referred here. The scarcity of purely alpine, as opposed to northern and alpine, forms in Ireland is notable, a scarcity which appears to hold good for these insects throughout the entire Britannic area. The two species which would appear to possess such a range are *Drusus annulatus*, and *Apatania fimbriata*.

The following is a short list of some Irish species that are interesting on account either of their geographical distribution or of their general rarity. More detailed notes on their range will be found in the systematic part of this paper:—

ODONATA (Dragon-flies).

*Somatochlora arctica* Zett. Northern and alpine Europe; Caucasus; Siberia; Kamtschatka.

*Ischnura pumilio* (Charp.). Widespread in southern and central Europe; Asia.

EPHEMERIDAE (May-flies).

*Leptophlebia vespertina* (L.). Northern and central Europe.

PERLIDAE (Stone-flies).

*Capnia atra* Morton. Northern and alpine Europe.

PLANIPENNIA (Lacewing flies, &c.).

*Psectra diptera* Burm. Rare.

*Chrysops abbreviata* Curt.

*Sisyra Dalii* McLach.

*Sisyra terminalis* Curt.

} These are apparently local insects, though little is known of their continental range.

TRICHOPTERA (Caddis-flies).

*Phryganea obsoleta* Hagen. Northern and arctic Europe.

*Limnophilus fuscinervis* Zett. Northern and central Europe. Not known to occur in Great Britain.

*Limnophilus nigriceps* Zett. Northern and central Europe.

*Drusus annulatus* Steph. Mountains of central Europe.

*Apatania Wallengreni* McLach. Northern Europe.



**Apatania fimbriata** (Pict.). Mountains of central Europe; Ireland. Not known to occur in Great Britain.

**Silo nigricornis** (Pict.). Central Europe.

**Crunoecia irrorata** (Curt.). Central Europe.

**Molanna palpata** McLach. Lapland; Finland; Russia; Siberia; N. Scotland; Ireland.

**Adicella reducta** (Steph.). Central and southern Europe.

**Setodes argentipunctella** McLach. Belgium; Germany; Switzerland; Spain; Britain.

**Philopotamus montanus** (Donov.) var. **scoticus** McLach. Perthshire N. Wales; Kerry.

**Wormaldia mediana** McLach. Central and southern Europe.

**Polycentropus Kingi** McLach. Britain; Portugal; Sardinia; and probably other places.

**Setodes maculicornis** Pict. Ireland; Switzerland; France; Portugal. Not known to occur in Great Britain.

**Lype fragilis** (Pict.). Ireland; Switzerland; France; Spain. Not known to occur in Great Britain.

**Agapetus delicatulus** McLach. Ireland; Arran (Scotland); Pyrenees. Probably overlooked in other localities.

Our acknowledgments are due to the Fauna and Flora Committee appointed by the Royal Irish Academy, and also through the same Committee to the Royal Society, for enabling us to organize expeditions to visit remote parts of the country, thus considerably extending our knowledge of the range of many species.

For much kind help in the identification of difficult insects we desire to record our thanks to the late Mr. Robert McLachlan, F.R.S.; the Rev. A. E. Eaton, M.A.; Mr. K. J. Morton, F.E.S.; and Mr. H. L. F. Guernonprez.

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With regard to nomenclature and systematic arrangement, we have made use of C. W. Dale's "Catalogue of British Neuroptera and Trichoptera" (Harwood, 1907), as revised and corrected by Messrs. W. J. Lucas, K. J. Morton, and others.

An asterisk is prefixed to such species as do not figure in the "Neuropterous Fauna of Ireland" (1889), and in this case, also, the captor's names are indicated.

Irish specimens of the great majority of the species recorded in the following list are preserved in the natural history collections of the National Museum of Ireland.

LIST OF LOCALITIES IN WHICH COLLECTING HAS BEEN DONE.

MUNSTER.

CLARE.—Lahinch.

CORK.—Adrigole, Ballygriffin woods, Blackwater River, Blarney, Carrigrohane, Castletown Berehaven, Gearagh, Glandore, Glengariff, Hungry Hill, Kinsale, Lismore, Macroom, Mallow, Skibbereen, St. Anne's, Youghal.

KERRY.—Ardagh Lough, Ardtully, Boreen-a-Morave, Caragh Lake, Carrantuohill, Cloghereen, Cloonee, Coppagh Glen, Crincaum Lough, Derrynane, Deenagh River, Deer Park, Dingle, Dinish, Gap of Dunloe, Flesk River, Garagarry Lough, Glена, Glencar, Horses Glen, Kilbrean Lough, Loo Bridge, Mangerton, Muckcross, Parknasilla, Ross Castle, Spa Well, Staigue Fort, Torc Cascade, Valentia, Waterville, Windy Gap, Woodlawn.

LIMERICK.—Near Limerick.

TIPPERARY.—Cahir, Tipperary.

WATERFORD.—Cappagh Lough, Cappoquin, Dromana wood, Glendine, Glenshelane, Lismore, Mount Melleray, Salterbridge, Villierstown, Waterford.

CONNAUGHT.

GALWAY.—Ashford, Ballinasloe, Castlekirk, Clonbrock, Cong, Lough Corrib, Lough Derg, Maam, Maumwee Lough, Oughterard, Recess, Ross Lake, Roundstone, Salthill, Shindillagh Lough, Tuam, Woodford.

MAYO.—Achill, Aille Lough, Ballinlough, Bleachyard, Broad Lough, Carrowbeg River, Castlebar, Clare Island, Cogaula, Croaghpatrick, Croft, Dooghan Lough, Doo Lough, Inishbofin, Kip Lough, Knappa Lough, Knappa-beg Lough, Mount Brown Lough, Newport River, Prospect Lough, Westport.

ROSCOMMON.—Athlone, Mote Park, Summerhill, Yew Point.

SLIGO.—Ballymote, Keshcorran, Lough Gill, Markree Castle, Rosses Point, Sligo.

LEINSTER.

CARLOW.—Fenagh.

DUBLIN.—Dundrum, Balbriggan, Finglas, Glasnevin, Glencullen, Glendhu, Howth, Harold's Cross, Kingstown, Lucan, Portmarnock, Rathgar, Rathmines, River Tolka, Royal Canal, Sandymount, Santry, Sutton, Tallaght, Templeogue, Terenure, Tibbradden.

KILDARE.—Maynooth, Straffan.

KILKENNY.—Inistioge, Johnstown, Thomastown (River Nore).

KING'S COUNTY.—Edenderry.

LOUTH.—Carlingford, Castlebellingham, Drogheda (Boyne), Killincoole, Omeath.

QUEEN'S COUNTY.—Portarlington (River Barrow).

WESTMEATH.—Athlone, Ballykerran, Bog of Allen, Coosan Point, Lough Deravaragh, Glassan, Hare Island (Lough Ree), Killinure Bay, Killucan (Lough Ree), Moate, Mullingar, Shannon side, Twy River, Twy Lough, Waterston demesne, Wine Port.

WEXFORD.—Arcandrisk, Ballyhyland, Courtown, Edenvale, Enniscorthy, Ferns, Johnstown Castle woods, Killurin, New Ross, Rosslare, Slaney, Wexford.

WICKLOW.—Altidore, Bray, Calary Bog, Enniskerry, Glendalough, Glendasan, Glenmalur, Greystones, Laragh, Lough Bray, Lough Dan, Powerscourt, Roundwood.

#### ULSTER.

ANTRIM.—Ballinderry, Belfast, Cave Hill, Colin Glen, Derrymore, Fairhead, Island Magee, Lough Neagh, Portmore Lough, Randalstown, Shane's Castle, Toome.

ARMAGH.—Acton Glebe, Armagh, Cam Lough, Churchhill, Coney Island (Lough Neagh), Derrynoose, Fathom, Lough Gall, Kellystewart Lough, Lowry's Lough, Maghery, Mullinure, Poyntzpass, Scarva, Tanderagee.

DONEGAL.—Akiboon Lough, Ardara, Askerry Lough, Belleek, Bundoran, Cleggan, Clonkillybeg, Coolmore, Cottian, Coxtown, Dunleary Lough, Fern Lough, Lough Foyle, Glenbeagh, Gorteen Lough, Gweedore, Keel Lough, Kilmacrennan, Lennan Bridge, Largy River, Reelan Lough, Madourchin Lough, Meuthin Lough, Mnafin Lough, Lough Salt, Lough Swilly, Sproules Lough.

DOWN.—Annalong valley, Belfast, Cove Lake, Holywood, Lagan Canal.

FERMANAGH.—Enniskillen, Portora.

LONDONDERRY.—Near Derry.

MONAGHAN.—Emyvale, Glaslough.

TYRONE.—Altadiawan, Castlederg, Favour Royal.

It may be observed that the counties of Leitrim, Longford, Meath, and Cavan are altogether absent from this list.

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SYSTEMATIC PART.

ODONATA.

LIBELLULIDAE.

*Sympetrum striolatum* (Charp.).

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (common in the Killarney and Muckcross districts; Waterville; Parknasilla; Kenmare; Caragh Lake; &c.). Cork (west, mid., and east Cork; Glengariff; Skibbereen; Youghal; &c.). Waterford (Glenshelane; Cappagh Lough). **C.**—Roscommon (Yew Point). Mayo (Inishbofin; Westport and Newport districts). Sligo (Markree). **L.**—Wexford (Ballyhyland; Killurin; Johnstown Castle; &c.). Wicklow. Dublin (common, Botanic Gardens; Royal Canal; Howth; &c.). Westmeath (Killucan; Waterstown). **U.**—Armagh (Poyntzpass; Churchhill; &c.). Monaghan (Glaslough and Emyvale). Down (Rostrevor). Donegal (Bundoran; Ardara; Coolmore). Derry. Antrim (Randalstown bog).

Common and widely distributed in Ireland, as it is in the Britannic area generally. Mr. Moffat informs us that it is abundant everywhere in County Wexford, from the fourth week of June to the end of October, and it is occasionally seen in November.

*Distribution.*—Over the greater part of Europe, except the extreme north. Occurs also in N. Africa; the Canaries; Madeira; northern India (*Morton*), &c.

*Sympetrum scoticum* (Don.).

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Waterford (*W. H. Bath*). **C.**—Galway (Maumwee Lough). Roscommon (Yew Point). Mayo (Mount Brown Lough). **L.**—Kilkenny (Johnstown, *Haliday* MS.). Westmeath (Bog of Allen). **U.**—Monaghan (Glaslough, swarmed on a bog, *Morton*). Tyrone (Castlederg). Armagh (Poyntzpass). Down (Belfast, *Haliday* MS.).

*Distribution.*—In Great Britain this species frequents moors and marshes from Devonshire to Inverness, and appears to be more common towards the north. Widely spread in the Palaearctic region, ranging from Lapland to northern Italy, Russia, northern and central Asia, Japan. It also inhabits North America (Colorado, New Hampshire, *Ris.* Canada).

*Libellula depressa* L.

MUNSTER.

**M.**—Waterford (Glendine, July, 1834, *Miss Ball*). Ireland (*Haliday* MS. *De Selys*).



Apparently very rare. It is remarkable that this conspicuous Dragon-fly has not been observed in Ireland during recent years. Both Haliday and De Selys were aware that it had been taken by Miss Ball; but they did not record the locality. Fortunately the place and date of capture are mentioned by Miss Ball in her annotated copy of Stephens' "Catalogue of British Insects" (1829), now in the possession of the Irish National Museum. An Irish specimen, possibly the one recorded by Miss Ball, is preserved in the Trinity College Museum. Mr. Lucas remarks that this species passes a great deal of its time at a distance from water, and, in consequence, probably often escapes observation.

*Distribution*.—Great Britain (north midlands, southwards). Temperate Europe, ranging to the Caspian Sea; Greece; the Iberian Peninsula; Syria.

***Libellula quadrimaculata* L.**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Derrynane; Loo Bridge; Ross Castle). Cork (west; Skibbereen; Castletown; Adrigole; &c.). Clare (Lahinch). **C.**—Galway (Recess, and near Ballinasloe). Mayo (Carrowbeg River). Sligo (Markree Castle). **L.**—Wexford ("Ballyhyland, rare, probably not breeding on our streams, but occurs at intervals in the imago state. May be a straggler from the lower ground of the Slaney valley. I have never seen it fly over water in this neighbourhood," *Moffat, in litt.*). Carlow (Fenagh). Wicklow (*A. W. Foot*). Dublin (Glencullen, &c.). Westmeath (Twy Lough). **U.**—Monaghan (Glaslough, sparingly, *Morton*). Armagh (near Armagh; Churchhill).

This is the only species of *Libellula* found commonly in Ireland. We have no records of the occurrence of migratory swarms of this insect in Ireland, such as have been observed on the Continent and even in Great Britain. The variety *praenubila*, Newman, with a brownish suffusion of the wings surrounding the stigma spot, and saffron-coloured costa, occurs in Ireland.

*Distribution*.—Great Britain (Devonshire to Inverness, and the Hebrides). Extremely widely distributed throughout the Palaearctic region, from Lapland (rare) to Spain; Kashmir (*Calvert*); Kamtschatka, and Alaska. Found also in North America (Massachusetts and Colorado).

**\**Libellula fulva* Müll.**

MUNSTER.

**M.**—Kerry (Dingle, a male in the collection of the late C. W. Dale, *vide* W. J. Lucas, *Entom. Monthly Magazine*, (2) xix., p. 199. 1908).

In the above reference Mr. Lucas draws attention to an apparently

unrecorded Irish example of *Libellula fulva* contained in the Dale Collection of insects, now preserved in the Hope Department of the Oxford University Museum. The specimen is labelled "Ireland, R. W., 1849," in the handwriting of the late J. C. Dale, while a label at the side of the specimen indicates "Dingle" as the locality in which it was found. The initials

R. W." are probably those of Richard Weaver, formerly a well-known collector of British insects. The species is one which may well occur in this country. Mr. Lucas points out that it may easily be overlooked on account of its resemblance to other species, such as *L. depressa*, and perhaps *Orthetrum caerulescens*, a not uncommon species in the south-west of Ireland.

*Distribution.*—This Dragon-fly occurs very locally in the south of England and as far north as Yorkshire or Durham at least. It is widely distributed in Europe, frequenting lakes and slowly flowing waters.

*Orthetrum caerulescens* (Fab.).

MUNSTER. CONNAUGHT. LEINSTER.

**M.**—Kerry (Derrynane; Dinish; Gap of Dunloe; Windy Gap; Loo Bridge; Caragh Lake; Killarney; Ardtully). Cork (Castletown Berehaven; Glengariff). **C.**—Galway (Recess). **L.**—Wicklow (taken by *A. W. Foot*). Wexford ("not at all uncommon in peaty bogs in the north-western part of Co. Wexford, towards the Blackstairs range. In the valley of the small River Urrin, a tributary of the Slaney, it is, in suitable spots, often quite abundant." *Moffat, Irish Nat.* xviii., 1909, p. 24).

In Ireland, this species seems characteristic of the south; and we have no records further north than Galway and Wicklow. For the latter county we must rely on an old record made by Dr. A. W. Foot (*Proc. Dubl. Nat. Hist. Soc.*, 1870). In Co. Wexford Mr. C. B. Moffat finds this species locally plentiful, from the end of June to the middle of August.

*Distribution.*—In Great Britain, this insect has a southern range, occurring from Cornwall at least to Cumberland. It is said to have occurred in the south-west of Scotland; but the species does not figure in Mr. Evans' list of the Dragon-flies of the Forth area. Isle of Man. Abroad it is found in the temperate parts of Europe, ranging from southern Scandinavia to Spain; Algeria; Madeira.

[*Orthetrum cancellatum* (L.).

There is no reason to believe that this Dragon-fly has ever been found in Ireland. The only evidence of its occurrence is in a list of the British Dragon-flies published by De Selys, "*Revue des Odonates*" (page 257), where the species is indicated as having occurred in Ireland. No doubt this is an

error, as in the same work (page 12) the author remarks, concerning *L. cancellata*, "n'a pas encore été observée en Ecosse ni en Irlande." Haliday makes no mention of the insect in his MS. Catalogue. The record in the "Neuropterous Fauna of Ireland" must therefore be deleted.

*Distribution*.—According to Mr. McLachlan, the British range of this species is confined to the southern half of England. On the Continent it ranges from Scandinavia to Russia and Spain, occurring also in northern Africa.]

***Somatochlora arctica* (Zett.).**

**MUNSTER.**

**M.**—Kerry (Killarney, *McLachlan*; Dinish, *King*).

Very local. The following is the original record of the occurrence of this northern and alpine Dragon-fly in Ireland:—"I have in my cabinet a male of *Cordulia arctica*, Zetterstedt, taken at Killarney in 1862 by Mr. Birchall, and presented to me by that gentleman. This Dragon-fly had hitherto only been found in one British locality, Rannoch, Perthshire (see note on distribution). Being undoubtedly a northern species, one would scarcely have suspected its occurrence in the south-west of Ireland; but Mr. Birchall remarks that he has found *Coenonympha davus* and *Hadena rectilinea* at the same place, neither of which occurs in the southern parts of England. De Selys-Longchamps mentions that it has been taken on an elevated heath near Arlon in Belgium, a locality still further south" (*McLachlan, Entom. Monthly Mag.*, i., p. 76, 1864-5). There are two Irish specimens of this species in the Dale Collection at Oxford; one of these is labelled "Killarney" (*Lucas in Entom. Monthly Mag.*, (2) xix., p. 201, 1908).

*Distribution*.—Frequents boggy heaths and swamps in the highlands of Perthshire and Inverness (Rannoch, Strathglass, and Breadalbane). Abroad it is local in the mountain regions of northern and central Europe, ranging from Lapland to France (Ardennes). Also reported from the Caucasus and Siberia (*De Selys*, 1887). Kamtschatka (*Ris*).

[*Cordulia aenea* (L.).

"*Cordulia aenea*.—Killarney" (*Hely* in letter to Haliday in 1838, *vide Haliday MS.*).

"Ireland?—Towards the northern lakes (*Haliday*). I have not seen the specimens. There is no doubt that a *Cordulia* is found there, but the species has not been determined with certainty" (*De Selys*, Revision of the British Libellulidae, *Ann. Mag. Nat. Hist.*, xviii., p. 222, 1846).

These are the only available records of the occurrence of this Dragon-fly in Ireland. The locality mentioned in De Selys' "Revision" is evidently

unsatisfactory, as no specimens appear to have been captured in the north. We are inclined to believe that the Killarney insect taken by Mr. Hely may have been the preceding species.

*Distribution.*—In Great Britain, this species is found chiefly in the south of England; and it has not been observed in Scotland. Jersey. Widespread in northern and temperate Europe, extending from Scandinavia, Finland, &c., to Spain (*Navás*) and eastwards to the Ural mountains and northern Asia].

***Gomphus vulgatissimus* (L.).**

IRELAND ("Certainly Irish, Miss Ball," *Haliday* MS.; *De Selys*.)

Found in Ireland many years ago by Miss Ball; but unfortunately the place of capture seems unrecorded. It is not unlikely that the insect was taken in the south—perhaps in the Youghal district, where Miss Ball spent some time collecting Dragon-flies. A specimen of this species marked as Irish, in Trinity College Museum, was in all probability captured by Miss Ball. The rarity of this insect in Ireland is remarkable, as it usually occurs in numbers wherever it is found.

*Distribution.*—In Great Britain, this species is found in the south. Lucas records several localities ranging from Hants to Worcester (*British Dragon-flies*, 1900). Widespread in northern and central Europe. *Navás* says he has not seen it in Spain (1908). Represented by races in the south of Europe and Asia (*Ris*).

***Cordulegaster annulatus* (Latr.).**

ULSTER.

U.—"Northern Lakes, Haliday," *De Selys, Ann. Mag. Nat. Hist.*, xviii., 1846. Ireland (*Haliday* MS.).

This conspicuous insect was apparently taken in Ireland both by Haliday and Tardy (*vide Haliday* MS.) The locality quoted above was evidently supplied by Haliday to De Selys during the visit of the latter to this country in the summer of 1845. Mr. K. J. Morton records that a Dragon-fly seen, but not taken, by him at Glaslough in county Monaghan, was probably *C. annulatus* (*Entom. Monthly Mag.*, 1892, p. 301). One of the Haliday specimens is now in the Irish National Museum.

*Distribution.*—Widespread in Great Britain (Cornwall to Inverness). Jersey. Found over the greater part of central and southern Europe, ranging north to Sweden, where it is rare; occurs in northern Africa and Asia Minor. Mr. Morton informs us that in the west of Spain the type form is found, but in the eastern parts it is replaced by the variety *immaculifrons*, Selys.

[H\*]

**Brachytron pratense (Müll.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Cork (Kinsale). Waterford ("It occurs abundantly near Waterford." *Harcourt Bath*, in "British Dragon-flies," 1890, p. 58; Dromana wood). **C.**—Galway. Mayo (at a pool near the convent at Westport). **L.**—Wexford (Rosslare). Wicklow (*A. W. Foot*). Dublin (a single specimen captured on a bush in a garden near Balbriggan, *Wade*). Westmeath (Twy Lough; near Athlone). Louth (Castlebellingham). **U.**—Fermanagh (Portora; Enniskillen, *Allen*).

Though seldom met with, this species appears to be widespread in Ireland. The Kinsale specimen was captured at the Old Head lighthouse.

*Distribution.*—Occurs in the southern half of England and Wales. Apparently unrecorded from Scotland. Widely distributed in Europe from central Scandinavia to France, Italy, and the Caucasus. Asia Minor (*De Selys*).

**Aeschna juncea (L.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Derrynane; Kenmare; Valentia; Dinish; Muckcross; Caragh Lake; Waterville; Staigue Fort). Cork (Skibbereen). Tipperary (Cahir and Templemore). Limerick. **C.**—Galway (near Ballinasloe; Shindilla Lough; Castlekirk). Mayo (Kip Lough). Sligo (Markree). **L.**—Wexford (Ballyhyland district "moderately common, but less so, I think, than in suitable spots in Dublin and Wicklow. June 4th and September 18th are my earliest and latest dates for seeing it." *Moffat, in litt.*). Carlow (Fenagh). Wicklow (Altidore). Dublin (heaths on the Dublin mountains, Tibbradden, Glendhu, &c.). Westmeath (Waterstown; near Athlone). **U.**—Monaghan (Glaslough and Emyvale). Armagh (Lurgan; Lowry's Lough; Mullinure; Poyntzpass). Derry. Antrim (*Haliday*). Donegal (Lough Swilly, *Dale* collection).

Rather common in suitable localities, and probably as frequent in its occurrence in the north as in the south of Ireland. This fine species has often been captured in the vicinity of fir-woods, especially in boggy upland districts; and it has even been noticed "hawking" after prey in the streets and squares of Dublin. Dr. D. Freeman informs us that on one occasion, while collecting by a wood near Ballinasloe he secured a number of males that were apparently attracted by a captured female specimen.

*Distribution.*—Great Britain (south of England to Inverness and the Hebrides, though apparently commonest towards the north). Exceedingly widespread throughout the northern part of the Palaearctic region, ranging

from Finland to Kamtschatka. Occurs also in North America. Alaska (*Harriman Expedition*).

*Aeschna grandis* (L.).

CONNAUGHT. LEINSTER. ULSTER.

C.—Galway (Woodford). L.—Carlow (Fenagh). Wicklow (taken by A. W. Foot). Westmeath (Waterstown). U.—Monaghan (Emyvale and Glaslough, commoner than *A. juncea* at the latter place, *Morton*). Armagh (Derrynoose). Antrim (Derrymore).

We have few records of the occurrence of this Dragon-fly, and none from the province of Munster; no doubt its Irish range is much wider than is here indicated. Mr. Morton remarks that at Glaslough "this fine insect was commoner than *A. juncea*; and many examples of it were under notice during the hours of bright sunshine, when it might be seen chasing and capturing such large game as *Characeas graminis* and *Hydroecia nictitans*; it also followed its well-known crepuscular habit; and one dull, warm evening I watched some examples carrying on their feeding operations along the shores of the lake until it was nearly dark" (*Entom. Monthly Mag.*, 1892).

*Distribution*.—Although the continental range of this species is very similar to that of *A. juncea*, the distribution of the two in Great Britain is very different, as *A. grandis* is found in the south (Devonshire to Yorkshire at least). It has been recorded from the extreme south of Scotland. Northern and central Europe. Asia.

AGRIONIDAE.

*Calopteryx virgo* (L.).

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

M.—Kerry (Derrynane; Glencar; Killarney). Cork (St. Anne's, *Haliday* MS.; Castletown Berehaven; Hungry Hill; Glengariff). Waterford (Lismore; Glenshelane). C.—Galway (Lough Corrib at Oughterard; Recess). L.—Wexford (Ballyhyland, very common; Rosslare; Johnstown Castle grounds; Edenvale; Ferns). Queen's County (river Barrow near Portarlinton). King's County (Frankford). Wicklow (taken by A. W. Foot). U.—Antrim (Belfast, *De Selys*).

The records of this beautiful species are comparatively few, yet they are sufficient to show that it is as widespread as the following species in Ireland. All the Irish specimens that we have seen belong to the northern form with paler bases and tips to the wings. The variety of the male with uniformly smoke-coloured wings and evidently finer venation (*anceps* Steph.) occurs at

Glenshelane and Lismore in the Blackwater district. This form is, however, considered to be a mere condition of the species.

*Distribution*.—Ranges further north in Great Britain than *C. splendens*. Cornwall to Sutherland; while the continental distribution is equally wide. Europe, northern Asia to Amur and Japan (*Ris*). In the south of Europe (Iberian Peninsula, &c.) it is represented by the form *meridionalis* De Selys.

***Calopteryx splendens* (Harr.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Deenagh River). Cork (Glengarriff; Skibbereen; common in the marshy ground at The Gearagh; Macroom; Blackwater at Fermoy; St. Anne's). Waterford (Glenshelane). Tipperary (Cahir). Clare. **C.**—Galway (Clonbrock). Mayo (Carrowbeg River). Sligo (Markree Castle). **L.**—Wexford (Edenvale; Ballyhyland). Kilkenny (Johnstown, *Holiday* MS.; banks of the Nore near Thomastown). Carlow (River Barrow). Queen's County (River Barrow near Portarlinton, *Patterson*). King's County (Edenderry). Kildare (Straffan). Wicklow (taken by *A. W. Foot*; Powerscourt, *Dale* collection). Dublin (River Liffey near Lucan). Westmeath (Athlone; Twy River). Louth (Killincoole; Castlebellingham). **U.**—Monaghan (Emyvale). Belfast district (*Dale* collection, *Entom. Monthly Mag.*, 1909).

Locally common, frequenting wooded river-banks, especially in the south of Ireland. At Ballyhyland Mr. Moffat says it is totally unknown in most seasons; but in July, 1889, it appeared in great profusion in the valley of the Urrin, where for the time being it quite outnumbered the common *C. virgo*. It lasted for about a month, and has not been seen in the district since that year.

*Distribution*.—In Great Britain the species does not seem to have been observed north of Yorkshire (*Lucas*, 1900). Widely distributed in the Palaearctic region from Scandinavia and Finland (Nurmijarvi-See) to Algeria; Asia Minor, Turkestan, and Siberia. Replaced in the extreme south of Europe by the race *xanthostoma* (Charp.).

***Lestes dryas* Kirby.**

MUNSTER. LEINSTER.

**M.**—Kerry (Caragh Lake, taken by *H. M. Edelsten* early in September, 1906, *Lucas*, *Entom.*, xl., p. 66, 1907). **L.**—Westmeath (an immature specimen taken in June on the River Shannon near Athlone, *King*, *Entom. Monthly Mag.*, (2) vi., p. 120, 1895).

Until the recent discovery of this species its occurrence in Ireland was

regarded as doubtful. The records of Haliday and De Selys were based on a specimen supposed to have been taken in Ireland by Mr. Tardy. Dr. A. W. Foot includes *Lestes nympha* in his list of Wicklow Dragon-flies; but as no authority name is quoted, this record had better be referred to the following species.

*Distribution.*—This widely spread European insect is apparently very local in the Britannic area, having been observed chiefly in the fen districts of Cambridge, Essex, and Lincolnshire. Europe and northern Asia to Amurland (*Ris*).

***Lestes sponsa* (Hansem.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Killarney, *Dale* collection; Kenmare; Waterville; Parknasilla; Kilbrean Lough). Cork (Ballygriffin woods; East and West Cork, *Balfour Browne*). Waterford (Cappagh Lough). **C.**—Galway (Ross Lake near Galway). **L.**—Wexford (banks of Slaney). Wicklow (*Lestes nympha*, *Foot*). Westmeath (near Athlone). **U.**—Monaghan (Emyvale and Glaslough, exceedingly common on both bogs and lakes, *Morton*). Donegal (Coolmore).

Widespread, though apparently less common in the east than in the south of Ireland.

*Distribution.*—Great Britain (in suitable places from Kent to Inverness at least). Common in northern (Finland, &c.) and central Europe, ranging to Amurland and Japan (*Ris*).

[*Lestes barbara*, Fab.

“Ireland? A male in the Dublin Museum under the name of *nympha*” (*De Selys, Ann. Mag. Nat. Hist.*, 1846). “Un mâle du Museum de Dublin est indiqué comme ayant été pris en Irlande” (*De Selys, “Revue des Odonates,”* 1850).

Extremely doubtful. The only evidence of the occurrence of this Dragon-fly in the Britannic area is furnished by De Selys, who saw a *reputed* Irish specimen in Trinity College Museum more than fifty years ago. No trace of this specimen is now to be found. According to a note in Mr. Haliday’s MS. “Catalogue of Irish Insects,” the specimen in question was taken by J. Tardy, but its Irish origin was evidently doubted by Haliday. Under the circumstances it seems best to relegate this species to the list of reputed British insects—a course which has already been adopted by Mr. Lucas in his work on British Dragon-flies (1900).

*Distribution.*—*Lestes barbara* is Mediterranean in its habitat, ranging from Portugal and Algeria to Asia Minor, becoming more local and sporadic in its occurrence towards central Europe. Kashmir, Persia, and Turkestan.



As it occurs in Belgium and in the Channel Islands (Alderney), it may yet be found living in this country.]

***Erythromma najas* (Hansem.).**

ULSTER.

**U.**—Down ("Covelake, June," *Haliday* MS.; "près de Belfast, Haliday," *De Selys*, *Revue des Odonates*, 1850).

Apparently a very rare species in this country; and it has not been met with in recent years. The locality "Covelake," noted in Haliday's MS. Catalogue, is rather indistinctly written; but there can scarcely be any doubt that it is meant for Cove Lough, some 1500 feet up on the Mourne Mountains, near Slieve Donard, a district often visited by Haliday. At the same time it should be pointed out that *Erythromma najas* is not an upland species in Great Britain. We are indebted to Mr. R. Ll. Praeger for indicating the position of this little-known lake.

*Distribution.*—Mr. Lucas reports *E. najas* as a very local insect in England, ranging from Lincolnshire to Dorset. Abroad it is found from Scandinavia and Finland (Nurmijärvi-See) to the extreme south-west of Europe, penetrating eastwards into Siberia.

***Pyrrhosoma nymphula* (Sulz.)**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Derrynane; Waterville; Deenagh River; Muckcross). Cork (Glengarriff; Adrigole; Castletown; Macroom; &c.). **C.**—Galway (Ross). Mayo (Carrowbeg River). **L.**—Wexford (banks of Slaney; New Ross; Johnstown Castle grounds; "Ballyhyland, the commonest of our small Dragon-flies, and always the first to appear and the last to linger. May 3rd and October 1st are my extreme dates for it," *Moffat, in litt.*). Wicklow. Kildare (Maynooth). Dublin (Tallaght, &c.). Westmeath (Killucan; Twy Lough). Louth (Castlebellingham). **U.**—Monaghan (Emyvale). Armagh (common). Donegal (Ardara and Foyle district). Down (Slieve Donard and Annalong valley). Antrim (Ballinderry). Derry.

Common in suitable localities.

*Distribution.*—Occurs throughout Great Britain. Europe; Asia Minor.

***Ischnura pumilio* (Charp.).**

CONNAUGHT. LEINSTER. ULSTER.

**C.**—Galway (near Roundstone, 1908, *Praeger*). Mayo (Carrowbeg River). **L.**—Wexford (Rosslare). **U.**—Down or Antrim (near Belfast, *De Selys*, "Revision," 1850).

Rare. An Irish specimen, probably taken near Belfast, is in Mr. Haliday's Collection, now preserved in the National Museum in Dublin.

*Distribution*.—Local in Great Britain. Mr. Lucas vouches for a comparatively few localities in the south and east of England. Occurs in southern and central Europe, inhabiting also Algeria; Madeira; Asia Minor; extending, according to Ris, into northern and eastern Asia.

***Ischnura elegans* (Van Lind).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Derrynane; Ross Castle; Dinish; Deenagh River; Cloonee; Waterville). Cork (Glengariff; Castletown; Glandore). **C.**—Galway (Maumwee Lough). Mayo (Inishbofin; Carrowbeg River; Knappagh; Kip Lough; Doolough; Westport). Sligo (Rosses Point; Markree). **L.**—Wexford (Ballyhyland; New Ross; Rosslare; Killurin; Johnstown Castle; &c.) Wicklow. Dublin (Royal Canal, where the variety *rufescens* was common in 1887, *Moffat*; Glasnevin; Sutton; &c.). Westmeath (Shannon side; Coosan Point). **U.**—Monaghan (Emyvale and Glaslough, in great abundance, *Morton*). Armagh (Lowry's Lough; Mullinure; Lough Gall; &c.). Donegal (Coolmore; Ardara; Foyle district). Down (Holywood, and Lagan Canal). Antrim (Island Magee and Randalstown).

Common and widely distributed. The variety *rufescens*, Leach, occurs in many localities.

*Distribution*.—This species is found in most parts of the Britannic area, from the Scilly Isles to the Hebrides. It is widely distributed in northern and central Europe. Asia.

***Agrion pulchellum* Van Lind.**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Parknasilla; Muckcross). **C.**—Mayo (Westport). **L.**—Louth (Castlebellingham). Wicklow (Newcastle). **U.**—Armagh (*Johnson*). Monaghan (Emyvale, *Morton*). Donegal (Belleek; Foyle district). Antrim (Belfast and Ballinderry).

The few available records of this Dragon-fly show that it is widely spread in Ireland, though it may prove to be less common than the following species.

*Distribution*.—Ranges from the northern counties of England southwards. Recorded from Argyleshire, but not recently observed in Scotland. Abroad it is found from Scandinavia to Italy and Spain (*Navás*); Algeria; Asia.

***Agrion puella* (L.).**

MUNSTER. CONNAUGHT. LEINSTER.

**M.**—Kerry (Muckcross; Ross Castle; Parknasilla). Cork (Glandore; Macroom). Waterford (Cappoquin). **C.**—Mayo (Westport; Carrowbeg

River; Knappagh Lough). **L.**—Wexford (Ballyhyland, very common, *Moffat*; New Ross; Edenvale; Johnstown Castle woods). Wicklow (taken by *A. W. Foot*). Dublin (Royal Canal). Westmeath (Killucan; Moate).

Common where it occurs.

*Distribution.*—*Agrion puella* is a common species in England, becoming rarer towards the north, and there are extremely few records from Scotland (Midlothian, *Evans*). Widespread in the western ports of the Palaearctic region from Lapland (very rare) and Finland to Algiers and Russia.

### **Enallagma cyathigerum** Charp.

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Derrynane; Ross Castle; Deenagh River; Ardagh Lough; Waterville; Cloonee; Parknasilla). Cork (St. Anne's; Ballygriffin wood; Glengariff). Waterford (Cappagh Lake; Cappoquin). **C.**—Galway (Maumwee Lough). Mayo (Inishbofin; Carrowbeg River; Kip and Knappagh Loughs). **L.**—Wexford (banks of Slaney). Wicklow (Glendalough). Dublin (Royal Canal). Westmeath (Twy Lough; Coosan Point; Mullingar; Deravaragh). Louth (Castlebellingham). **U.**—Monaghan (Emyvale and Glaslough, common, *Morton*). Armagh (Lowry's Lough; Lough Gall; &c.). Donegal (Ardara; Coolmore; Bundoran). Derry. Antrim (Belfast).

Common and widely distributed.

*Distribution.*—Found throughout the British Isles. Abroad it ranges from Scandinavia and Spain eastwards to Turkestan.

## **PLECTOPTERA.**

### **EPHEMERIDAE.**

#### **Ephemera vulgata** L.

CONNAUGHT. LEINSTER. ULSTER.

**C.**—Mayo (Castlebar Lake). Sligo (near Sligo). **L.**—Westmeath (Athlone). **U.**—Armagh (Churchhill). Donegal (Coolmore). Antrim (Lough Neagh, *Haliday* ms.).

*Distribution.*—Great Britain (Midlands, east, and south of England, occurring in warmer waters than the next species); widely distributed in Europe, ranging from Lapland to Spain. Mr. Eaton informs us (*in litt.*) that the normal race is found in Scandinavia; Denmark; France, near Blois; and Switzerland, near Geneva; a darker-winged race in Posen, near Messeritz (*Zeller*); and a dwarf form in central Spain, near Madrid and Cuenca (*Rambur* and *Chapman*).

**Ephemera danica** Müll.

MUNSTER. CONNAUGHT. LEINSTER.

**M.**—Kerry (Ross Castle). **C.**—Roscommon. Sligo (near Sligo). Mayo (Mount Brown Lough). **L.**—Westmeath (Athlone). Louth (Castlebellingham).

Probably overlooked in many localities. The male and female subimago stages are known to anglers as the "Green Drake" and the "Bastard Drake"; and the fully matured insect is the well-known May-fly. It is the *Ephemera* of the English Lakes and the High Peak district, and of Interlaken, and the Doubs near Pontarlier abroad (*Eaton in litt.*).

*Distribution.*—Great Britain (in the south of England this species ranges westwards to Somerset and Devon, and as far north at least as Perthshire in North Britain). In western Europe it is as widely distributed as the preceding species.

**Leptophlebia marginata** (L.).

MUNSTER. LEINSTER.

**M.**—Kerry (Deenagh River; Woodlawn; Torc Cascade). **L.**—Westmeath (Twy Lough).

*Distribution.*—Great Britain (London district to Inverness). Temperate and arctic Europe. Occurring also in Asia, Turkestan, and in North America.

**Leptophlebia cineta** (Retz).

CONNAUGHT. LEINSTER.

**C.**—Mayo (Westport; Mount Brown Lough; Carrowbeg River). Roscommon (Summerhill). **L.**—Dublin (Lucan). Westmeath (Twy River; Shannon; Bog of Allen; Killinure; Glasson).

*Distribution.*—Great Britain (not ascertained; Rannoch, &c.). Northern (Finmark, Schoyen: *fide Petersen*, 1908) and temperate Europe. Not recorded from Spain.<sup>1</sup>

**Ephemerella ignita** Poda.

MUNSTER. CONNAUGHT. LEINSTER.

**M.**—Kerry (Ross Castle; Deenagh River; Woodlawn; Cloghereen; Horse's Glen; Cappagh Glen; Spa Well; Gap of Dunloe). **C.**—Roscommon (Summerhill; Yew Point). **L.**—Dublin (Lucan). Westmeath (Hare Island; Shannon; Coosan Point; Twy River; Glasson).

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NOTE ADDED IN PRESS.

<sup>1</sup> *Leptophlebia vespertina* (L.) (*J. Meyeri* Eaton, 1884).

CONNAUGHT.

**C.**—Mayo (Castlebar Lough, coll. *Halbert*). Specimens of a May-fly taken in this locality on the 18th June, 1909, were identified as the present species by the Rev. A. E. Eaton.

*Distribution.*—Hitherto known from Scandinavia (arctic and southern); Switzerland; Denmark (Horsens and Svejboek, *Petersen*); and the Scotch highlands (Strathglass, *Briggs*).

[I\*]

*Distribution*.—Great Britain (common, south of England to Inverness-shire). Central and southern Europe. Denmark (Horsens; Svejbaek, Petersen).

***Caenis dimidiata* Steph.**

LEINSTER.

L.—Westmeath (Shannon; Coosan Point; Killinure).

*Distribution*.—Great Britain. Widespread throughout Europe (Finland, *fide* Aro; Denmark, *fide* Petersen).

***Caenis halterata* (Fab.) (*C. macrura* Steph.)**

CONNAUGHT. LEINSTER.

C.—Mayo (Westport Mall). L.—Dublin (Glasnevin, common, *Haliday* ms.). Westmeath (Coosan Point; Killinure).

Recorded in *Haliday's* ms. list under the name of *Caenis macrura* Steph.

*Distribution*.—Great Britain (not ascertained). On the Continent this species ranges from Lapland to Algeria (Biskra and neighbourhood, *fide* Eaton, *in litt.*).

***Baëtis binoculatus* (L.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

M.—Kerry (Ross Castle; Deenagh River; Woodlawn; Tore Cascade; Gap of Dunloe). C.—Mayo (Clare Island). L.—Wicklow (Enniskerry). U.—Armagh (Mullinure).

*Distribution*.—Great Britain (not ascertained). Widespread in Europe (Finland, Aro; Norway, Schoyen; Denmark, Petersen, &c.) North America (Hudson's Bay Territory, Eaton).

***Baëtis scambus* Eton.**

LEINSTER.

L.—Dublin (Lucan).

*Distribution*.—Great Britain (occurs as far north as Inverness). Range abroad not known; has been recorded from Denmark (Horsens; Skellerup, *fide* Petersen). Germany (*Ris*).

***Baëtis vernus* Curt.**

MUNSTER. LEINSTER. ULSTER.

M.—Kerry (Deenagh River; Tore Cascade; Horse's Glen; Coppagh Glen; Gap of Dunloe). L.—Dublin (Rathfarnham). U.—Antrim (Cave Hill, *Haliday* collection).

*Distribution*.—Great Britain (uncertain). Finland (Aro). Arctic Norway (Hatfjelddalen, *fide* Strand). Germany (*Ris*).

**Baëtis rhodani** (Pict.).

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Gap of Dunloe). **C.**—Roscommon (Summer Hill). **L.**—Wicklow (Enniskerry, in October). Westmeath (Shannon at Athlone). **U.**—Armagh (Armagh).

*Distribution.*—Great Britain (Devonshire to Inverness). Widely spread in western Europe, ranging from Norway (Lardalsoren and Aal, *vide Strand*) to Algeria; Madeira, and the Canaries.

**Baëtis pumilus** (Burm.).

MUNSTER. CONNAUGHT. LEINSTER.

**M.**—Kerry (Deenagh River; Woodlawn; Spa Well; Gap of Dunloe; Farranfore). **C.**—Mayo (Clare Island). Roscommon (Summerhill). **L.**—Dublin (Lucan). Westmeath (Killinure and Glasson).

*Distribution.*—Great Britain (uncertain, occurs as far north as Perthshire). Widely distributed, ranging from Scandinavia to Corsica, &c.

**Centroptilum luteolum** Müll.

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle; Woodlawn; Deenagh River; Glenna; Torc Cascade). **C.**—Roscommon (Summerhill and Yew Point). **L.**—Dublin (Tolka at Glasnevin; Lucan). Westmeath (Shannon; Coosan Point; Twy River; Glasson; Bog of Allen). **U.**—Donegal (Lough Fern; Gorteen Lough).

*Distribution.*—Great Britain (common, ranging to North Shetlands). Ranges from Finmark to Portugal, northern Italy, and Algeria (at the foot of Mount Edough, Bône, *vide Eaton*). Found also in North America (Hudson's Bay Territory, *Eaton*).

**Cloëon dipterum** (L.).

MUNSTER.

**M.**—Kerry (Ross Castle and Deenagh River).

*Distribution.*—Great Britain (range unknown). Abroad this species is found from Scandinavia to Algeria (Ain Sefra, Province of Oran, *vide Eaton*); Egypt; Japan; and the Atlantic islands (Madeira, Teneriffe, &c., *Eaton*).

**Cloëon simile** Eaton.

MUNSTER. CONNAUGHT. LEINSTER.

**M.**—Kerry (Ross Castle; Deenagh River; Glenna; Horse's Glen; Gap of Dunloe). **C.**—Mayo (Knappabeg; Prospect; Aille and Doogan Loughs; Newport River; Castlekirk; Achill). **L.**—Westmeath (Shannon; Coosan Point; Killinure; Waterstown).

*Distribution.*—Great Britain (ranges from the south of England to North Shetlands). Central and southern Europe. Jersey. Also in Denmark (Silkeborg and Randers, *fide Petersen*).

***Cloëon rufulum* (Müll.).**

MUNSTER. CONNAUGHT. LEINSTER.

**M.**—Kerry (Deenagh River; Gap of Dunloe). **C.**—Mayo (Knappagh and Mount Brown Loughs). **L.**—Westmeath (Coosan Point).

*Distribution.*—Great Britain (south of England to Inverness). Widely distributed, Scandinavia to Algeria.

***Siphlorus armatus* Eaton.**

MUNSTER.

**M.**—Kerry (Killarney).

*Distribution.*—Not ascertained. England (*Eaton*).

***Siphlorus lacustris* Eaton.**

MUNSTER. CONNAUGHT. LEINSTER.

**M.**—Kerry (Gap of Dunloe). **C.**—Galway (Castlekirk; Maumwee Lough). Roscommon (Yew Point). Mayo (Kip Lough). **L.**—Westmeath (Shannon at Athlone; Coosan Point).

*Distribution.*—Great Britain (Snowdon, Rannoch, &c.). Norway (Tysfjorden, *fide Strand*). Savoy; Italy; Denmark; and Steiermark (*Ris*, Die Süßwasserfauna Deutschlands, 1909).

***Rithrogena semicolorata* (Curt.).**

MUNSTER. LEINSTER.

**M.**—Kerry (Deenagh River and Coppagh Glen). **L.**—Dublin, (Dodder at Tallaght).

*Distribution.*—Great Britain (Devon; Dorset; Cumberland; Lake District; Perth; Inverness). Western Europe, ranging from Scandinavia to the Alps and Pyrenees.

***Heptagenia sulphurea* (Müll.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Woodlawn; Dinish; Horse's Glen; Gap of Dunloe). Waterford (Lismore). **C.**—Galway (Lough Corrib near Galway). Roscommon (Yew Point). Sligo (near Sligo; Markree Castle). **L.**—Dublin (Lucan). Westmeath (Bog of Allen; Shannon; Coosan Point; Ballykeeran; Killinure; Waterstown). Louth (Castlebellingham). **U.**—Donegal (Gorteen; Fern and Keel Loughs; Glen Beagh; Clonkillybeg). Armagh (Coney Island in Lough Neagh).

*Distribution*.—Great Britain (London district to Inverness). Europe. Eastern Amur (*McLachlan*).

***Ecdyurus venosus* (Fab.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Deenagh River; Tore Cascade, *McLachlan*). **C.**—Roscommon (Yew Point). **L.**—Dublin (Lucan). Westmeath (Hare Island and Coosan Point). **U.**—Donegal (Keel and Irvine's Loughs).

*Distribution*.—Great Britain (South of England to Inverness). Generally distributed from Scandinavia to the Mediterranean region. In Switzerland, near the Traubach (4,000 feet alt.) in the neighbourhood of Habkern, Interlaken, water 60° F. (*Eaton*). Lower down in Habkern Thal the *Ecdyurus* is *E. helveticus* (*Eaton in litt.*).

***Ecdyurus insignis* Eaton.**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Woodlawn; Deenagh River). **C.**—Mayo (Mount Brown Lough). **L.**—Westmeath (Glasson). **U.**—Donegal (Gorteen and Keel Loughs (Lennan Bridge)).

*Distribution*.—Not ascertained.

***Ecdyurus lateralis* (Curt.).**

MUNSTER. CONNAUGHT. LEINSTER.

**M.**—Kerry (Gap of Dunloe). **C.**—Mayo (Clare Island). **L.**—Wicklow (Enniskerry).

*Distribution*.—Great Britain (common in the north and west. Extending from Inverness-shire to Dorset, *Eaton*). Widespread in Europe.

**PLECOPTERA.**

**PERLIDAE.**

**\**Perla maxima* Scop.**

MUNSTER. LEINSTER.

**M.**—Waterford (Blackwater near Lismore, *Halbert*; Youghal, *Miss Ball*). **L.**—Dublin (River Dodder at Terenure and Tallaght, *Halbert*). Wicklow (Bray, *Haliday* MS.).

Owing to its lurking habits, this fine insect has probably been overlooked in many Irish counties. Haliday includes "*Perla marginata*" in his MS. Catalogue; in all probability this record should refer to the present species.

*Distribution*.—Great Britain (widespread from Devonshire to Perthshire



and Aran, *Morton*). Abroad it inhabits Scandinavia and central Europe; Lower Alps; Carinthia; Croatia to Bosnia; Herzegovina; &c. Not recorded in Navás's Spanish list (1908).

**\*Perla cephalotes** Curt.

MUNSTER.

**M.**—Kerry (nymph taken in a stream flowing out of Lough Eighter at an elevation of about 1500 feet on Carrantuohill, June, *Halbert*).

A *Perla*-nymph found under stones in the above-mentioned locality is apparently referable to the present species, as it agrees exactly with *cephalotes* nymphs taken by Mr. K. J. Morton in the south of Scotland. An adult male taken in Ireland by Prof. G. H. Carpenter is in the Dublin Museum. Unfortunately the place of capture of this specimen is uncertain, though it is possibly from the shore of Lough Gill in County Sligo.

*Distribution*.—Found in Great Britain, from Devonshire to the Clyde and Forth districts of Scotland (*Morton*); northern and central Europe, and as far east as the Carpathians; Spain (*Navás*).

**Dictyopteryx Mortoni** Klap.

MUNSTER. LEINSTER.

**M.**—Kerry (Deenagh River, *King*). **L.**—Louth (Castlebellingham! *Thornhill*).

Probably widespread in Ireland. Mr. Morton points out that the insect figuring in British collections as *Dictyopteryx microcephala* must in future be recorded as the present species (*Entom. Monthly Mag.*, 1907).

*Distribution*.—In Great Britain this insect has been reported from many highland lakes and lowland rivers, ranging south to the rivers Severn, Kennet, and Test (*Morton*). Continental range uncertain.

**Dictyopteryx (Dictyopterygella) recta** Kempny.

CONNAUGHT. LEINSTER. ULSTER.

**C.**—Roscommon (Mote Park, *Halbert*). Sligo (near Sligo! *Johnson*). **L.**—Wicklow (Streams from Glendalough Lake and Glenmalur valley, *Halbert*). **U.**—Armagh (Coney Island in Lough Neagh! *Johnson*).

Occurs under stones on the margins of streams and lakes, appearing at about the middle of April. This species has been named in British collections for many years as *Isogenus nubecula*.

*Distribution*.—Great Britain (recorded by Mr. Morton as an abundant insect at many highland lakes, from the Forth district northwards). Northern Europe to Finland. Klapálek records this species from alpine lakes in the Riesengebirge; Carpathians; Siberia.

***Chloroperla grammatica* Poda.**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Deenagh River; Kenmare; Glencar). **C.**—Mayo (Carrowbeg River). **L.**—Wicklow (Enniskerry). **U.**—Armagh (Tanderagee).

*Distribution.*—Great Britain (common, Devonshire to Inverness). Widely spread in Europe, ranging from Scandinavia to Spain.

**\**Isopteryx tripunctata* Scop.**

ULSTER.

**U.**—Donegal (Ardara, *Johnson*).

Found in moss from this locality (*McLachlan, Entom. Monthly Mag.*, xxix., 1893).

*Distribution.*—Great Britain (widespread, Devonshire to Inverness). Scandinavia (*Kempny*); central Europe (*Tümpel*). Not recorded from Spain.

***Isopteryx torrentium* Pict.**

MUNSTER. CONNAUGHT. LEINSTER.

**M.**—Kerry (Deenagh River; Tore; Woodlawn; Ross Castle; Ardagh Lough; Devil's Punch-bowl; Gap of Dunloe; &c.). **C.**—Galway (Castle-kirk). Mayo (Carrowbeg River). **L.**—Westmeath (Coosan Point).

*Distribution.*—Great Britain (common, ranges as far north as the Hebrides and Inverness). Mountain districts of northern and central Europe, extending to Spain.

***Capnia nigra* Pict.**

LEINSTER. ULSTER.

**L.**—Dublin (River Dodder at Tallaght). **U.**—Down (Holywood, *Haliday* ms.).

Common in the bed of the river Dodder, appearing towards the end of March.

*Distribution.*—Great Britain (uncertain, ranges north at least to Perthshire). On the Continent it is found in most parts of northern and central Europe, and Navás reports it from Spain.

**\**Capnia atra* Morton.**

MUNSTER.

**M.**—Kerry (Devil's Punch-bowl on Mangerton, June, *Halbert*; July, *King*).

Occurs in great abundance under stones on the margins of the sub-alpine lake in this locality (*Irish Nat.*, 1908). Mr. Morton has verified the identification of the Irish specimens, and remarks that they belong

to an interesting form of this insect. "The genitalia of the ♂ are identical with a preparation of mine (typical) from Loch Ard, Perthshire. The form is slightly brachypterous, and therein lies the interesting point. I saw in the McLachlan collection, some ♀ ♀ from Braemar which were also somewhat short-winged. Klapálek has described from ♀ ♀ a species which he calls *C. vidua*, and he suggests that the Braemar specimens may be his *vidua*. In the absence of the ♂, however, it is somewhat difficult to decide on the value of the species at all" (*Morton, in litt.*).

*Distribution.*—In Great Britain this insect has been found on the shores of highland lakes in Inverness, Perth, and Aberdeenshire. On the Continent it has been recorded from Scandinavia, ranging north to Finnish Lapland (*Sahlberg*); Switzerland (*Ris*); Spain (Sierra Nevada, *Klapálek*).

**\*Taeniopteryx Risii Morton.**

LEINSTER.

L.—Wicklow (Glendalough and Laragh, *Halbert*).

Common where it occurs on the banks of rapid streams, appearing about the middle of April.

*Distribution.*—Great Britain (frequents streams in various localities from Devon to Perthshire). Widely distributed in Europe, having been recorded from Norway; Switzerland; Albania; France; Pyrenees, and Spain.

[*Taeniopteryx nebulosa* is given with reserve in Mr. Haliday's MS. Catalogue, so that further evidence of its occurrence in Ireland is required.]

**\*Nemoura praecox Morton (*N. marginata* Kempny).**

LEINSTER.

L.—Wicklow (Glencree, *Carpenter*).

A female specimen taken at this locality in April is in the Dublin Museum (*vide Morton*).

*Distribution.*—Great Britain (not rare; Perthshire; Clyde; Forth; and Manchester districts, *Morton*). Continental range unknown; has been recorded from Germany (*Ris*), Switzerland, and Lower Austria.

**\*Nemoura Meyeri Pict.**

LEINSTER. ULSTER.

L.—Dublin (River Dodder at Tallaght, *Halbert*). Wicklow (streams at Glendalough, Glendasan, Laragh, Lough Bray, and Powerscourt, *Halbert*).

U.—Antrim (Cave Hill, *Haliday* collection).

Apparently common in suitable localities. Appears on the Wicklow streams at about the middle of April.

*Distribution.*—The range of this insect in Great Britain is not known.

Morton says it is rather common at streams in North Britain (as far north as Perthshire). Briggs reports it from Devonshire. Abroad it has been recorded from Germany (*Ris*); Switzerland (*Ris*); Carinthia; Lower Austria; and Portugal (*Navás*).

***Nemoura cinerea* Oliv.**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Glencar; Muckcross; Kenmare demesne; Deenagh River). Mayo (Westport). **L.**—Wicklow (stream from Lough Bray). Dublin (Lucan demesne). **U.**—Donegal (Gorteen Lough near Kilmacrennan). Antrim (Lough Neagh, *Haliday* collection).

*Distribution.*—Great Britain (uncertain, occurs as far north as Inverness-shire). Abroad this species has been recorded from various countries, ranging from Scandinavia to Spain and Portugal.

***Nemoura variegata* Oliv.**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Glencar; Muckcross). **C.**—Mayo (Westport; Carrowbeg River). Roscommon (Yew Point). **L.**—Westmeath (Athlone; Killinure Lough; Coosan Point; Twy Lough; Bog of Allen). **U.**—Armagh (Mullinure). Antrim (Portmore Lough). Donegal (Ardara).

*Distribution.*—Great Britain (common, ranging north to Inverness and the Outer Hebrides). On the Continent it is found from Finmark to Spain and eastwards to Turkestan. Frequents standing and slowly flowing water on the Alps, ascending to 2000 mètres (*Ris*).

***Nemoura inconspicua* (Pict.). Morton.**

MUNSTER. LEINSTER. ULSTER.

**M.**—Kerry (Glencar and Kenmare). **L.**—Wexford (Edenvale). Westmeath (Athlone). **U.**—Armagh (Lowry's Lough and Mullinure). Monaghan (Emyvale).

*Distribution.*—Great Britain (uncertain; Morton finds it sparingly at small streams and springs in Scotland). Norway; Switzerland; Bohemia; &c.

[*Nemoura lateralis* Pict., and *N. humeralis* Pict., have been recorded in the "Neuropterous Fauna of Ireland" (1889); but on account of the recent revision of the nomenclature of the Perlidae, these names must be removed from the Irish list.]

**\**Leuctra Klapálecki* Kempny.**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Glencar, *Halbert*). **C.**—Mayo (Westport, *King*). **L.**—Wicklow (Glendalough, *Halbert*). Dublin (Lucan, *King*; Glendhu, *Halbert*). **U.**—Monaghan (Emyvale, *Morton*). Donegal (Ardara! *Johnson*).*Distribution.*—Great Britain (common in Scotland and ranges southwards to Devonshire). Continental range uncertain. Norway; Germany; Switzerland; &c.**\**Leuctra hippopus* Kempny.**

MUNSTER. LEINSTER.

**M.**—Kerry (Devil's Punch-bowl and Muckcross, *Halbert*). **L.**—Wicklow (streams at Lough Bray and Enniskerry, *Halbert*). Dublin (River Dodder at Tallaght, and mountain streams, *Halbert*).

Abundant where it occurs, frequenting streams in hilly districts.

*Distribution.*—Great Britain (common in Scotland, *Morton*). Norway; Germany; Austria; &c.**\**Leuctra inermis* Kempny.**

MUNSTER. LEINSTER.

**M.**—Kerry (Upper Lake of Killarney, *Halbert*). Wicklow (streams at Glendalough, Glendasan, and Laragh, *Halbert*).*Distribution.*—Great Britain (common in Scotland; Wales, *Morton*). Continental range unknown.[*Leuctra nigra* Oliv., was inserted in the 1889 list by error.]**COPEOGNATHA.****PSOCIDAE.*****Amphigerontia variegata* (Latr.).**

MUNSTER. LEINSTER.

**M.**—Kerry (Deenagh River and Cloghereen). **L.**—Dublin (Lucan and Howth). Ireland (*Haliday* coll.).*Distribution.*—Great Britain (no doubt common, *Guermonprez, in litt.*). Northern and central Europe. Spain (*Navás*).**\**Amphigerontia fasciata* (Fab.).**

LEINSTER.

**L.**—Wexford (Edenvale, *King*).*Distribution.*—Great Britain (common, extending to Inverness-shire at least). Widely spread in northern and central Europe, ranging from Finland to the Pyrenees.

***Amphigerontia bifasciata* (Latr.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle; Deenagh River; Cloghereen; Torc Cascade). Waterford (Mount Melleray; Cappoquin). **C.**—Galway (Salthill and Castlekirk). Mayo (Carrowbeg River; Cogaula and Kip Loughs). **L.**—Dublin (Lucan and Howth). Wexford (Arcandrisk). **U.**—Donegal (Foyle district).

*Distribution.*—Great Britain (common, ranging north to the Shetlands). Northern and central Europe (*Reuter*). Spain (*Navás*).

***Psocus sexpunctatus* L.**

LEINSTER.

**L.**—Dublin (Lucan).

*Distribution.*—Common in Great Britain, ranging north as far as Inverness-shire. Northern and central Europe (*Reuter*). Spain (*Navás*).

**\**Psocus major* Kolbe.**

LEINSTER.

**L.**—Wexford (Enniscorthy).

Taken by Mr. Beaumont at Enniscorthy in September (*McLachlan, Entom. Monthly Mag.*, (2) i, p. 234).

*Distribution.*—Great Britain (recorded from the southern half of England). Abroad it is reported from Finland and Germany.

***Psocus nebulosus* Steph.**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Deenagh River; Torc; Dinish; Deer Park; Ross Castle). Waterford (Dromana wood). **C.**—Roscommon (Yew Point). Mayo (Carrowbeg River and Mount Brown). **L.**—Dublin (Lucan). Westmeath (Wineport; Waterstown). **U.**—Monaghan (Glaslough).

*Distribution.*—Great Britain (common, *McLachlan*). Northern and central Europe (*Reuter*). Spain (*Navás*).

***Psocus longicornis* (Fab.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Deenagh River; Torc Cascade; Cloghereen; Dinish). Cork (Ballygriffin woods). Waterford (Dromana and Villierstown). **C.**—Roscommon (Yew Point). **L.**—Dublin (Lucan and Santry). Westmeath (Twy River and Hare Island). **U.**—Monaghan (Glaslough). Antrim (Portmore).

*Distribution.*—Great Britain (widely and generally distributed, *Guermonprez, in litt.*). Northern and central Europe (*Reuter*). Eastern Pyrenees (*McLachlan*).

***Stenopsocus immaculatus* (Steph.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle; Deenagh River; Ardagh Lough; Torc Cascade; Dinish; Boreen-a-morave). Cork (Ballygriffin woods). Waterford (Dromana). **C.**—Roscommon (Yew Point). Mayo (Carrowbeg River). **L.**—Wexford (Johnstown Castle grounds; Edenvale). Wicklow (Enniskerry). Dublin (Royal Canal bank). **U.**—Donegal (Largy River).

*Distribution.*—Great Britain (widespread, occurring as far north as Sutherland). Northern and central Europe (*Reuter*). Spain (*Navás*).

***Graphopsocus cruciatus* (L.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle; Deenagh River; Torc Cascade; Kenmare). Waterford (Lismore). **C.**—Mayo (Carrowbeg River). **L.**—Wexford (Johnstown Castle woods). Dublin (Howth and Phoenix Park). Westmeath (Coosan; Athlone; Waterstown). **U.**—Donegal (Sproule's Lough; Lennan Bridge; Largy River; Cottian; Foyle district). Down (Newcastle).

*Distribution.*—Great Britain (common and generally distributed, Devon to Inverness). Northern and central Europe, Sardinia, Madeira (*Reuter*). Spain (*Navás*). Portugal (*McLachlan*).

**MESOPSOCIDAE.*****Mesopsocus unipunctatus* (Müll.).**

MUNSTER. CONNAUGHT. LEINSTER.

**M.**—Kerry (Ross Castle; Deenagh River; Boreen-a-Morave; Cloghereen Ardagh Lough; Cahirciveen). **C.**—Galway (Salthill). Roscommon (Yew Point). Mayo (Carrowbeg River and Mount Brown Lough; Westport). **L.**—Wexford (Rosslare). Dublin (Tolka at Glasnevin; Howth and Portmarnock). Westmeath (Coosan; Killinure; Twy Lough).

*Distribution.*—Great Britain (equally widespread as the last). Northern and central Europe, ranging to North Cape. Spain (*Navás*).

***Philotarsus flaviceps* (Steph.).**

MUNSTER. CONNAUGHT. LEINSTER.

**M.**—Kerry (Ross Castle; Deenagh River; Muckcross; Torc; Gap of Dunloe; Loo Bridge; &c.). Waterford (Dromana and Glenshelane). **C.**—Galway (Salthill). Mayo (Carrowbeg River; Mount Brown; Kip and Cogaula Loughs). **L.**—Wicklow (Lough Dan). Dublin (Lucan and Howth). Westmeath (Waterstown, and Shannon at Athlone).

Common where it occurs amongst coniferous trees.

*Distribution.*—Great Britain (occurs as far north as Inverness). Wide-spread in Europe, ranging from Finland to Spain.

***Elipsocus hyalinus* (Steph.).**

MUNSTER. LEINSTER.

**M.**—Kerry (Ross Castle and Cloghereen). **L.**—Dublin (Lucan and Howth). Westmeath (Hare Island).

*Distribution.*—Great Britain (recorded from numerous localities from Sussex to Inverness). Widely spread in western Europe, ranging from Scandinavia to Spain.

***Elipsocus Westwoodi* McLach.**

MUNSTER. CONNAUGHT. LEINSTER.

**M.**—Kerry (Ross Castle; Deenagh River; Boreen-a-Morave; Cloghereen; Ardagh Lough). Cork (Ballygriffin woods). Waterford (Lismore; Dromana and Mount Melleray). **C.**—Galway (Salthill). Roscommon (Yew Point). Mayo (Westport; Carrowbeg River; Mount Brown; &c.). **L.**—Wexford (near Wexford; Killurin; Rosslare). Dublin (Lucan and Howth). Westmeath (Coosan; Athlone; Moate).

*Distribution.*—Widely distributed in Great Britain, ranging into the Shetlands. Abroad it has been found in Scandinavia (Finland southwards); Germany; Holland.

***Elipsocus abietis* Kolbe.**

CONNAUGHT. LEINSTER.

**C.**—Galway (Salthill). Mayo (Carrowbeg River; Mount Brown Lough). **L.**—Wicklow (Roundwood). Dublin (Lucan and Howth). Westmeath (Twy River; Waterstown; Moate).

*Distribution.*—Great Britain (probably general). Europe, frequent in pine forests (*Enderlein*).

***Elipsocus cyanops* Rostock.**

MUNSTER.

**M.**—Kerry (Ross Castle; Deenagh River; Cloghereen; Dinish; Boreen-a-Morave; Spa Well).

*Distribution.*—Great Britain (recorded from various localities ranging from Sussex to Inverness). Abroad it is reported from Finland, Germany, and the Pyrenees.

***Pterodela pedicularia* (L.).**

MUNSTER. LEINSTER.

**M.**—Kerry (Ross Castle; Boreen-a-Morave). **L.**—Wexford (Edenvale and Rosslare). Wicklow (Roundwood). Dublin (Lucan and Howth). Westmeath (Athlone).



*Distribution*.—Great Britain (common in houses, from the Isle of Wight, London district, &c., to the north of Scotland). Widely spread on the Continent, ranging from Finland and Spain to Turkestan.

#### CAECILIIDAE.

##### *Peripsocus alboguttatus* Dalm.

LEINSTER.

L.—Dublin (Lucan).

*Distribution*.—Northern and central Europe (*Reuter*). Madeira.

##### *Peripsocus subpupillatus* McLach.

MUNSTER. LEINSTER.

M.—Kerry (Ross Castle; Deenagh River; Muckcross; Booreen-a-Morave). Waterford (Dromana and Glenshelane). L.—Wexford (Edenvale; Killurin; Rosslare). Dublin (Lucan).

*Distribution*.—Referring to *Peripsocus alboguttatus* and *P. subpupillatus*, Mr. Guermonprez remarks (*in litt.*) that they are very likely generally distributed in Great Britain. West of England, &c.

##### *Peripsocus phæopterus* (Steph.).

MUNSTER. CONNAUGHT. LEINSTER.

M.—Kerry (Ross Castle; Deenagh River; Boreen-a-Morave; Muckcross; Ardagh Lough; Kenmare). Waterford (Lismore; Glenshelane and Mount Melleray). C.—Mayo (Carrowbeg River and Cogaula). L.—Wexford (Killurin; Edenvale and Rosslare). Dublin (Lucan; Howth, off Larch). Westmeath (Waterstown; Glassan; Athlone; Moate).

*Distribution*.—Great Britain (probably general). Widely spread in western Europe, ranging from Finland (*Reuter*) to Spain (*Navás*).

##### \**Ectopsocus Briggsi* McLach.

MUNSTER. LEINSTER.

M.—Cork (Ballygriffin woods, beaten out of trees, *King*). Waterford (Lismore, *King*). L.—Wicklow (Roundwood, *Halbert*). Dublin (Howth and Phoenix Park, *Halbert*).

At Roundwood, and in the Phoenix Park, this interesting species occurred commonly in plantations of Conifers during the month of October.

*Distribution*.—The distribution of this species seems little known. In Great Britain it has been found in various localities in the south of England, ranging from Devonshire to Kent. Abroad it has been reported from Sydney, N. S. W., and from Salisbury, Mashonaland. In the latter place it

occurred on a plateau at about 5000 feet elevation. Enderlein suggests that the insect may have been brought from Australia to Britain. According to McLachlan, however, both Australia and Africa may have received it from England, where to all appearances it is native, occurring chiefly amongst fallen leaves during the autumn and winter months. (*Entom. Monthly Mag.*, 1903, p. 296).

***Caecilius fuscopterus* (Latr.).**

MUNSTER. CONNAUGHT. LEINSTER.

**M.**—Kerry (Deenagh River; Boreen-a-Morave; Torc; Ross Castle). Waterford (Glenshelane). **C.**—Roscommon (Yew Point). Mayo (Carrowbeg River). **L.**—Wexford (Edenvale; Killurin). Westmeath (Bellevue; Waterstown).

*Distribution.*—Great Britain (common, ranging as far north as Inverness). Northern and central Europe (*Reuter*). Spain (*Navás*).

***Caecilius flavidus* (Steph.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle; Cloghercen; Muckcross Abbey; Glenna; Horse's Glen; Deenagh River; Kenmare; &c.). Cork (Ballygriffin woods). Waterford (Dromana). **C.**—Galway (near Maam). Mayo (Carrowbeg River). **L.**—Wexford (Killurin and Johnstown Castle). Wicklow (Lough Dan). Dublin (Lucan). Westmeath (Waterstown). **U.**—Donegal (Cottian; Largy River; Lough Madourchin; Sproule's Lough).

*Distribution.*—Great Britain (occurs as far north as Inverness). Europe, Lapland to Spain.

***Caecilius obsoletus* (Steph.).**

MUNSTER. CONNAUGHT. LEINSTER.

**M.**—Kerry (Deenagh River; Boreen-a-Morave; Ross Castle; Dinish). Waterford (Lismore; Glenshelane). **C.**—Galway (Salthill; Maam). **L.**—Wexford (Edenvale; Arcandrisk; Johnstown Castle woods). Dublin (Lucan; Howth; Tolka at Glasnevin). Westmeath (Waterstown).

*Distribution.*—Great Britain (South of England to Inverness). Northern and central Europe from Finland to France.

***Caecilius Burmeisteri* Brauer.**

MUNSTER. CONNAUGHT. LEINSTER.

**M.**—Kerry (Dinish; Ross Castle; Boreen-a-Morave). **C.**—Galway (Maam). Mayo (Carrowbeg River). **L.**—Wicklow (Roundwood). Dublin (Howth; Lucan; Phoenix Park). Westmeath (Waterstown).

*Distribution.*—Great Britain (probably generally distributed—Surrey,

Sussex, Inverness; common amongst Junipers). Northern and central Europe.

***Caecilius perlatus* Kolbe.**

MUNSTER. CONNAUGHT. LEINSTER.

**M.**—Kerry (Dinish; Ross Castle; Deenagh; Boreen-a-Morave). **C.**—Galway (near Maam; Salthill). **Mayo** (Carrowbeg River). **L.**—Wexford (Arcandrisk and Edenvale). Dublin (Tolka at Glasnevin; Lucan). Westmeath (Killinure; Waterstown).

*Distribution.*—Great Britain (probably general). Northern and central Europe, ranging into Finland.

***Trichopsocus Dalei* (McLach.).**

MUNSTER.

**M.**—Kerry (Cloghereen).

*Distribution.*—Probably generally distributed—Devon; Dorset; Sussex (occurs in lanes and gardens, *Guermoprez*); Glasgow (common in greenhouses in the Botanic Gardens); and other localities. Continental range unknown. McLachlan records it from Madeira and the Canaries.

**ATROPIDAE.**

***Atropos pulsatoria* L.**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Killarney and Kenmare). **C.**—Mayo (Westport). **L.**—Dublin. Westmeath (Athlone).

Found in old books, and in collections of insects and plants.

*Distribution.*—Great Britain (widely spread). Europe. North America.

**\**Hyperetes guestfalicus* Kolbe.**

LEINSTER.

**L.**—Wicklow (Roundwood and Lough Dan, on Conifers, *Halbert*). Dublin (Howth; Phoenix Park; Grand Canal bank, on elms, *Halbert*).

Not uncommon in the Dublin district, hiding in the crevices of rough-barked trees. At Howth it also occurs amongst shingle and refuse on the seashore, just above high-water mark.

*Distribution.*—This insect is no doubt generally distributed in the Britannie area (*McLachlan, Entom. Monthly Mag.*, 1898), and is probably often overlooked on account of its retired habits. Mr. Guermoprez, who has examined some of the Irish specimens, remarks (*in litt.*) that he has found it commonly in Sussex and elsewhere in England. Continental range not ascertained. Germany.

**Lepinotus inquilinus** Heyd. (*P. picea* Mots.).

CONNAUGHT. LEINSTER.

**C.**—Mayo (in a house at Westport). **L.**—Dublin. (Howth, &c., in houses). Westmeath (in a house at Athlone). Ireland (*Haliday* ms.).

Found occasionally in natural history collections. Haliday records it in his ms. catalogue as occurring among corks, hay, &c.

*Distribution.*—This insect used to be considered rare in Britain. It has recently been found in great abundance in London granaries (*Entom. Record*, 1905); also at Hastings in a neglected collection of plants; Sussex; Surrey, &c. Mr. McLachlan says it is "found living in boxes of exotic (in one case Egyptian) insects. If it be not indigenous in England, it is at any rate naturalized here" (*Entom. Monthly Mag.*, iii., 1867). Abroad it has been reported from Finland; Russia; central Europe; Spain; Egypt; and North America.

**TROCTIDAE.**

**Troctes divinatorius** (Müll.).

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Killarney). **C.**—Mayo (Westport). Sligo. **L.**—Dublin. **U.**—Donegal (Kilmacrennan).

In houses, and collections of insects and plants.

*Distribution.*—Found throughout Great Britain. Probably cosmopolitan, occurring in Europe; North America; Greenland; &c.

**PLANIPENNIA.**

**SIALIDAE.**

**Sialis lutaria** (L.).

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Waterford (Glenshelane valley). **C.**—Mayo (Carrowbeg River). Sligo (Markree Castle). **L.**—Dublin (*Haliday* ms.; River Tolka near Finglas). Westmeath (Athlone). **U.**—Armagh (Lowry's Lough and Churchhill). Antrim (Lough Neagh near Toome).

This insect, the "Alder Fly" of anglers, probably occurs in suitable localities throughout the country.

*Distribution.*—It is common in Great Britain, having been observed as far north as Inverness and the Outer Hebrides. Widely spread in the Palaearctic region, ranging from Lapland and Finland to Spain, and eastwards to Siberia (Lake Baikal). Occurs in the Alps at an elevation of over 7000 feet (*Zschokke*).

## OSMYLIDAE.

\**Osmylus chrysops* (L.) (*O. maculatus* Fab.).

MUNSTER. CONNAUGHT. LEINSTER.

**M.**—Kerry (Ardtully near Kenmare! July, 1893, *Kane*; Killarney, *Haliday* MS.) Cork (banks of the Shournagh River, *Haliday* MS.). **C.**—Galway (Leenane, *Haliday* MS.). **L.**—Wexford (Edenvale, *King*). Kilkenny (Inistioge, *Haliday* MS.). Dublin (Lucan, *Freeman*).

Apparently this beautiful insect is to be found, locally, on river-banks in the southern half of Ireland. The records noted in Mr. Haliday's MS. catalogue have not been previously published.

*Distribution.*—In Great Britain it is recorded as not uncommon about streams (*McLachlan*) ranging from Devonshire to Yorkshire at least. It has not been observed in Scotland.

Widely spread in Europe, extending from southern Sweden to Spain and the Caucasus.

## HEMEROBIDAE.

*Sisyrus fuscata* (Fab.).

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle; Gap of Dunloe). **C.**—Mayo (Carrowbeg River; Prospect Lough; Kip Lough). **L.**—Wexford (Killurin). Dublin (Lucan). **U.**—Monaghan (Glaslough and Emyvale). Donegal (Keel and Sproule's Lough; Clonkillybeg; Glenbeagh). Armagh (Loughgall). "Ireland" (*Haliday* MS.).

Probably common. Haliday was of opinion that the curious larva described by Westwood under the name of *Branchiotoma spongillae*, found living in fresh-water sponges, is in reality the larva of *Sisyrus fuscata* (Trans. Entom. Soc. London, v., pp. 31, 32, 1847). The larvæ of *Sisyrus* are now known to live in fresh-water sponges, and they may be found in the canal system of species of *Euspongilla* and *Ephydatia*.

*Distribution.*—Great Britain (common, ranging into Inverness). Northern and central Europe.

*Sisyrus Dalii* McLach.

MUNSTER. LEINSTER.

**M.**—Kerry (Ross Castle; Dinish). **L.**—Wexford (Edenvale). Dublin (Tolka at Glasnevin).

*Distribution.*—Great Britain (local, has been found in Yorkshire, at Ambleside, in North Wales, Surrey, Dorset, and the Scilly Isles). The continental range has not been ascertained; but it is known to occur in Germany (Westphalia and Saxony); Denmark (Bornholm); and Portugal.

**Sisyra terminalis** Curt.

MUNSTER. LEINSTER.

**M.**—Kerry (Lakes of Killarney, *Haliday* MS.; *Hagen* in *Entom. Annual*, 1858; Ross Castle; Deenagh; Cloghereen). **L.**—Dublin (Lucan).

The first British specimens of this rare species were discovered at Killarney by A. H. Haliday.

*Distribution.*—Great Britain (the range of this species is little known; it has been recorded from Worcestershire and Surrey). Sweden; Germany (Saxony); and the Carpathians (*Wallengren*).

**Hemerobius micans** Oliv.

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle; Cloghereen; Tore Cascade; Deenagh River; Deer Park; Boreen-a-Morave). **C.**—Galway (Cong; Salthill). Mayo (Carrowbeg River; Mount Brown; Westport). **L.**—Wicklow (Dargle; Greystones). Dublin (Lucan). Westmeath (Coosan Point; Waterstown; Bog of Allen). **U.**—Armagh (Mullinure; Loughgilly). Donegal (Coxtown; Kilmacrennan; Glenbeagh).

*Distribution.*—Ranges from Devon to Perthshire in Great Britain. Isle of Man. Probably spread all over Europe (*McLachlan*). Swedish Lapland (*Wallengren*).

**Hemerobius nitidulus** Fab.

MUNSTER.

**M.**—Kerry (Ross Castle; Tore Cascade).

Apparently rare. Occurs on *Pinus sylvestris*.

*Distribution.*—Great Britain (south of England to Inverness). Widespread in Europe, occurring in arctic Norway; Turkestan.

**Hemerobius humuli** L.

CONNAUGHT. LEINSTER. ULSTER.

**C.**—Mayo (Carrowbeg River). **L.**—Wicklow (Enniskerry). **U.**—Donegal (Coolmore). "Ireland" (*Haliday* MS.).

*Distribution.*—Great Britain (Devon to Perthshire). Isle of Man. Widespread in Europe, arctic Norway, &c. Siberia. North America.

**Hemerobius lutescens** Fab.

MUNSTER. CONNAUGHT. LEINSTER.

**M.**—Kerry (Cloghereen; Tore Cascade; Boreen-a-Morave). Cork (Ballygriffin woods). **C.**—Galway (Salthill). Mayo (Carrowbeg River; Mount Brown). Sligo (near Sligo). **L.**—Wexford (Rosslare). Dublin

(Lucan). Westmeath (Coosan Point; Shannon side; Wineport; Waterstown; Athlone). **U.**—Armagh (Mullinure). Donegal (Cottian; Largy River).

*Distribution.*—Great Britain (Devon to Inverness). Recorded by McLachlan as probably abundant over Europe, occurring amongst deciduous trees, and more rarely amongst Conifers.

**Hemerobius marginatus** Steph.

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle; Torc Road). **C.**—Mayo (Carrowbeg River). **L.**—Wicklow (woods at Lough Dan). **U.**—Donegal (Glenbeagh; Kilmacrennan; Cottian Lough).

*Distribution.*—Great Britain (south of England to Inverness). Apparently widely spread in Europe (McLachlan).

**Hemerobius orotypus** Wall.

MUNSTER. LEINSTER. ULSTER.

**M.**—Kerry (Torc Cascade; Boreen-a-Morave). **L.**—Westmeath (Waterstown). **M.**—Armagh (Mullinure; Ballybrennan). Armagh (Fathom). Donegal (Coxtown). "Ireland" ("*variegatus* Z." of Haliday MS. probably).

The *Hemerobius* "*sp. nov.*" of the "Neuropterous Fauna of Ireland" (1889) is to be referred to the present species.

*Distribution.*—Great Britain (Devon northwards to Sutherland). The continental range of this species has not been ascertained, though it is known to occur in Scandinavia (to Lapland, Wallengren) and in the Pyrenees, extending as far east as the Carpathians; Styria (Morton).

**Hemerobius nervosus** Fab.

LEINSTER. ULSTER.

**L.**—Dublin (Lucan; Tolka). Westmeath (Waterstown).

**M.**—Antrim (Lough Neagh at Toome and Portmore). Armagh. "Ireland" (Haliday MS.).

*Distribution.*—Great Britain (locally common; Mr. Morton records it as occurring in Scotland wherever there is natural birch). Abroad it is widely spread, extending into the Arctic Circle, and probably less common south of the Alps (McLachlan).

**Hemerobius subnebulosus** Steph.

CONNAUGHT. LEINSTER. ULSTER.

**C.**—Sligo (near Sligo). **L.**—Kildare (Maynooth). Dublin (Dundrum). Westmeath (Coosan Point). **U.**—Armagh (Mullinure; Armagh in garden). Down (Holywood).

Local in woods. In England this species is especially common in gardens ; and, as McLachlan points out, it is consequently liable to artificial dispersal with plants and shrubs.

*Distribution.*—Great Britain (Devonshire to Shetlands). Isle of Man. Widespread in Europe, ranging from Lapland to Spain ; Atlantic Islands ; Siberia ; Turkestan.

**Hemerobius stigma** Steph.

MUNSTER. CONNAUGHT. LEINSTER.

**M.**—Kerry (Ross Castle ; Deenagh River ; Tore Road). **C.**—Galway (Castlekirk). **L.**—Wexford (Killurin). Dublin (Howth). Westmeath (Wineport ; Waterstown ; Bog of Allen ; Bellevue).

*Distribution.*—Great Britain (occurs in coniferous woods from Devonshire to the extreme north of Scotland). Widely distributed in Europe, ranging from Lapland to Corsica ; Portugal, &c. ; it also inhabits the Canaries.

**Hemerobius atrifrons** McLach.

CONNAUGHT. LEINSTER.

**C.**—Galway (Castlekirk). **L.**—Westmeath (Waterstown).

Apparently rare. Occurs on Conifers.

*Distribution.*—Great Britain (Devonshire to Inverness). Northern and central Europe ; eastern Siberia.

**Micromus paganus** (L.).

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle). **C.**—Sligo (Lough Gill, and near Sligo). **L.**—Wicklow (Enniskerry). Kildare (Maynooth). **U.**—Tyrone (Altadiawan). Armagh (Mullinure, &c.).

*Distribution.*—Great Britain (Devonshire to the Clyde area). Northern and central Europe ; Lapland.

**Micromus variegatus** (Fab.).

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Tore Cascade). Waterford (Lismore and Cappagh Lake). **C.**—Galway (Maam River). Mayo (Westport demesne ; Carrowbeg River). **L.**—Wexford (Slaney bank near Wexford). Dublin (Howth). **U.**—Armagh (Mullinure, &c.).

*Distribution.*—Generally distributed in England (Worcester ; Hereford ; Devon ; &c.).

Northern and central Europe, extending to Italy ; Austria ; and Corsica.



**Micromus angulatus** (Steph.) (*M. aphidivorus* Schr. ?).

MUNSTER. LEINSTER.

**M.**—Kerry (Deenagh River). Wexford (Courtown, Enniscorthy, Beaumont, *Entom. Monthly Mag.*, xxix., p. 263).

*Distribution.*—Great Britain (rare, though widely distributed, extending into the south of Scotland, Kircudbright).

Europe ranging to arctic Norway; Siberia; Madeira; North America (Colorado; Canada).

**\*Psectra diptera** Burm.

LEINSTER.

**L.**—Wexford (banks of the River Slaney near Wexford, July, 1900, Halbert).

In the summer of 1900 one of us had the good fortune to find two examples of this little-known insect during a collecting tour in county Wexford. Unfortunately the great rarity of the insect was unsuspected at the time of capture, else more specimens might have been obtained, and more exact details of its occurrence noted. It is certain, however, that the insects were beaten from amongst bushes, including some hazel and alder, bordering the south bank of the River Slaney, a few miles to the north of the town of Wexford, during the month of July. *Psectra diptera* is remarkable for its small size, the rudimentary condition of the second pair of wings in the male, and also for its extreme rarity. Nothing appears to be known concerning its life-history.

The first recorded British specimen was found on a hazel bush in Breagh Wood, Somersetshire, by J. C. Dale, as long ago as 1843, and apparently there have been no subsequent captures of the species in England. The insect has, however, been recently discovered by Mr. B. McGowan, on the banks of the Nith in Dumfriesshire (*Entom. Monthly Mag.*, (2) xiv., (39), p. 14, 1903).

*Distribution.*—*Psectra diptera* seems to be generally rare, yet it is widely spread in the Palaearctic region, occurring in Finland; Sweden; Russia; Germany; Holland; Italy; and in Siberia (Irkutsk). It has also been found in North America (New York; Michigan; New Hampshire; N. Illinois), where, according to Banks (1905), it is apparently of more common occurrence than in Europe.

**CHRYSOPIDAE.****Chrysopa vittata** Wesm.

CONNAUGHT. LEINSTER. ULSTER.

**C.**—Roscommon (Yew Point). **L.**—Wicklow (Altadore). Westmeath

(Killucan). Louth (Castlebellingham). **U.**—Tyrone (Altadiawan). Donegal (near Kilmacrennan). "Ireland, common" (*Haliday* MS.).

*Distribution.*—Widely spread in Great Britain. Northern and central Europe; Styria; Siberia.

***Chrysopa flava* (Scop.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Deenagh River; Torc road; Boreen-a-Morave). Cork (Glandore). Waterford (Cappoquin). **C.**—Mayo (Carrowbeg River). Sligo (near Sligo). **L.**—Wexford (Rosslare). Wicklow (Altidore; Enniskerry). Dublin (Kingstown). Westmeath (Coosan; Waterstown). Louth (Castlebellingham). **U.**—Monaghan (Emyvale). Armagh.

*Distribution.*—Common in Great Britain from Devonshire to Inverness, and in western Europe generally.

***Chrysopa alba* (L.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Torc road; Boreen-a-Morave). **C.**—Galway (Cong). Mayo (Carrowbeg River). Roscommon (Yew Point). Sligo (near Sligo). **L.**—Wexford (Edenvale; Killurin; Johnstown Castle grounds). Wicklow (Enniskerry and Powerscourt demesne). **U.**—Tyrone (Favour Royal). Donegal (Cottian; Largy River; near Kilmacrennan).

*Distribution.*—Great Britain (Devonshire to Inverness at least). Northern and central Europe.

***Chrysopa flavifrons* Brauer.**

CONNAUGHT.

**C.**—Mayo (Carrowbeg River).

*Distribution.*—Great Britain (south of England; Wales; not recorded from Scotland). Sweden to Dalmatia (*Brauer*).

***Chrysopa tenella* Sch.**

LEINSTER. ULSTER.

**L.**—Dublin (Rathgar, coll. *Carpenter*). **U.**—Armagh (near Armagh, coll. *Johnson*).

A *Chrysopa* from the first-mentioned locality in the Irish National Museum is apparently referable to the present species. It is somewhat larger than the average size of British specimens; but it has two characters which are of *C. tenella*, a broad paler line on the thorax, and a black spot on the cheeks (*vide Morton*).

**\*Chrysopa vulgaris** Schneider.

LEINSTER.

**L.**—Wexford (near Wexford, *King*). Dublin (Howth, *King*). Westmeath (Athlone, *King*). “Ireland” (*Haliday* collection).

This common British species has not been previously recorded from Ireland.

*Distribution.*—Europe and the Atlantic Islands; Asia Minor; Turkestan; &c. Referring to the occurrence of *Chrysopa vulgaris* in Madeira, the Canaries, and St. Helena, Mr. McLachlan points out that it is rather liable to introduction into new localities during the larval stage. In Great Britain it is found from the south of England to the Shetlands, though possibly introduced in the latter place.

**\*Chrysopa prasina** Ramb. (*C. aspersa* Wesmael).

MUNSTER. LEINSTER.

**M.**—Cork (Glandore, *Halbert*). **L.**—Wexford (Rosslare, *King*). Westmeath (Athlone, *King*).

*Distribution.*—Great Britain (generally common in the south; Yorkshire; North Wales. Not recorded from Scotland). Widespread in Europe.

**\*Chrysopa ventralis** Curtis.

LEINSTER. ULSTER.

**L.**—Wexford (Killurin, *King*). **U.**—Monaghan (Emyvale, *Morton*).

*Distribution.*—Great Britain (south of England to Yorkshire at least). Northern and central Europe. Siberia.

**\*Chrysopa abbreviata** Curtis (*C. immaculata* Steph.).

LEINSTER.

**L.**—Dublin (“*Chrysopa abbreviata* = *immaculatus*, St. Portmarnock,” *Haliday* MS.)

This species appears to have been well known to Haliday, and it is recorded as above in his MS. catalogue of Irish insects. In a paper which he published in 1857 we find the following note:—“On the sand-hills (Portmarnock) themselves *Chrysopa abbreviata* was more common than I had ever before found it; and along with it, the freckled, sandy-coloured, stout larva, which doubtless feeds chiefly on the Aphides that abound on the sea-reeds” (*Nat. Hist. Review*, iv., p. 35). The identification of one of Haliday’s specimens, preserved in the Irish National Museum, has been verified as correct by Mr. K. J. Morton.

*Distribution.*—Great Britain (little is known of the range of this species; it occurs on sand-hills in the Liverpool district. Curtis records that it was

taken on the sand-hills at Appledore and Ravenglass, and on the Marrams near Yarmouth. British Entomology, ii., pl. 520, 1834). According to Reuter it is widely spread in Europe (Finland to Caucasus), but has not occurred in France, Spain, or Italy. Asia Minor.

[*Chrysopa perla* (L.).

Doubtfully Irish. The only indication of its occurrence is in Haliday's MS. catalogue. The entry is as follows:—" *Chrysopa perla* (Ste?) = *reticulata*?, *cancellata*, certainly Irish, *Hely*!"

The synonyms mentioned by Haliday admittedly refer to *Chrysopa perla* (L.), *fide* McLachlan, "Monograph of the British Neuroptera-Planipennia." However, as some doubt is implied in this record, we think it best to include the species with reserve, until more satisfactory evidence of its occurrence is forthcoming.]

#### CONIOPTERYGIDAE.

*Coniopteryx psociformis* (Halid.) Curtis.

MUNSTER. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle; Deenagh River; Muckcross Abbey; Tore Cascade; Boreen-a-Morave). Waterford (Lismore; Glenshelane). **L.**—Dublin (Lucan; Dundrum). **U.**—Down (Tollymore, Haliday collection).

*Distribution.*—Great Britain (Devonshire to Perthshire). Northern and central Europe (*Enderlein*).

*Coniopteryx lactea* Wesm. (*C. tineiformis* Curt.).

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Deenagh River; Boreen-a-Morave; Kenmare; Muckcross). **C.**—Galway (Salthill). Mayo (Carrowbeg River; Mount Brown Lough. Westport demesne). Roscommon (Yew Point). **L.**—Westmeath (Coosan Point; Shannon; Waterstown). **U.**—Donegal (Cottian; Largy River; Glenbeagh).

Widely spread and probably common in suitable localities.

Mr. Haliday remarks that this species "occurs in groves (especially on Coniferae) in summer:—When captured they feign death, with their antennae bent in under the thorax, as in Hemerobius and Chrysopa." He also records a *Coniopteryx* larva which he believed to be referable to the present species. "This larva is found wandering in groves from the end of August to October; it is probably Aphidivorous, though this I have not proved, nor have I bred it, but I can entertain no doubt that it is in the larva of *C. tineiformis*. The general character is closely allied to the larva of

[M\*]

Hemerobius, to which genus it is related." Curtis figures this larva, and remarks that it is rosy, with a large black patch on the back, and large white spots down each side. (See *Curtis*, British Entomology, xi., plate 528. 1834).

*Distribution*.—Occurs in Great Britain from Devonshire to Inverness at least. According to Enderlein it is widely distributed in Europe, ranging north into Finland.

### PANORPIDAE.

#### \**Panorpa germanica* L.

MUNSTER.

**M.**—Cork (Youghal and Blarney, *Halbert*, *Irish Naturalist*, xvi., pp. 289–299. 1907).

Very local, and probably confined to the south.

The first Irish specimens of this common European "Scorpion Fly" were discovered by Mr. R. Standen at these localities in July, 1907. A male example taken at Youghal approaches the immaculate variety, except for a small spot on the front margin of each of the wings, and an extremely narrow dark margin at the tip of the anterior pair (var. *apicalis* Steph.). On the contrary, in a female specimen found at Blarney, the spots are well developed and tend to form continuous bands across the wings, much as in *Panorpa communis*.

*Distribution*.—Occurs in most parts of Great Britain, ranging from Devonshire to Sutherland. Northern and central Europe.

### TRICHOPTERA.

#### PHRYGANEIDAE.

#### *Neuronium ruficrus* (Scop.).

CONNAUGHT. LEINSTER.

**C.**—Roscommon (Mote Park). **L.**—Westmeath (Bog of Allen).

*Distribution*.—Great Britain (south of England to Perthshire at least). Northern and central Europe.

#### *Phryganea grandis* L.

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle). **C.**—Galway (Ashford and Cong). Sligo (Markree Castle). **L.**—King's County (Edenderry). Dublin (River Dodder near Templeogue). Westmeath (Shannon near Athlone). **U.**—Donegal (Lough Fern near Kilmacrennan). Antrim (Lough Neagh).

*Distribution.*—In Great Britain this species is found from Devonshire to the south of Scotland. Widely spread in Europe.

***Phryganea striata* L.**

CONNAUGHT. LEINSTER. ULSTER.

**C.**—Roscommon (Yew Point). Mayo (Knappagh and Kip Loughs). **L.**—Louth (Castlebellingham). **U.**—Monaghan (Glaslough). Armagh (Loughgall, Keady, &c.). Donegal (Fern, Sproule's and Reelan Loughs).

*Distribution.*—Somewhat similar to that of the last species. Extends further north, into Finland and Lapland; Spain; Siberia.

***Phryganea obsoleta* (Hagen) McLach.**

MUNSTER. LEINSTER. ULSTER.

**M.**—Kerry (Killarney, *Cooke, Entom. Monthly Mag.*, xv., 1878). Limerick (August 16th, *Eaton, Entom. Monthly Mag.*, 1877). **L.**—Westmeath (Shannon, *King*). **U.**—Monaghan (Glaslough, *Morton*). Armagh (Kelly Stewart Lough! *Johnson*). Donegal (Ardara sandhills, *Johnson*).

*Distribution.*—Inhabits the northern parts of Great Britain (north of England and Wales, extending to Inverness-shire at least). Abroad it is found in Lapland; Finland; Norway; Sweden; North Russia; Germany (East Prussia, Bavaria, Lorraine, &c.); Switzerland, &c. Apparently not recorded from the southern parts of Europe. North-western Siberia (*McLachlan*).

***Phryganea varia* (Hagen). Fab.**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle). **C.**—Galway (Castle Kirk and Maumwee Loughs). Roscommon (Yew Point). Mayo (Cushinsheen and Prospect Loughs; Carrowbeg River). **L.**—King's County (Edenderry). Westmeath (Waterstown and Coosan). **U.**—Monaghan (Glaslough). Donegal (Gorteen; Sproule's; Keel; Akiboon; Muethin; and Askerry Loughs; Clonkillybeg; Glenbeagh).

*Distribution.*—Great Britain (Devonshire to North Shetlands). Almost all over Europe.

***Agrypnia pagetana* Curt.**

ULSTER.

**U.**—Monaghan (Glaslough). Donegal (Ardara).

*Distribution.*—Great Britain (not uncommon in the fen districts of the eastern counties of England, *McLachlan*; near Glasgow, *King*). Northern and central Europe; Spain (*Navás*); North-western Siberia; Turkestan.

**LIMNOPHILIDAE.*****Colpotaulius incisus* (Curt.).**

CONNAUGHT. LEINSTER. ULSTER.

**C.**—Galway (Castlekirk). Mayo (Clare Island; Castlebar; Broad Lough; Newport River; Inishbofin). **L.**—Westmeath (Shannon). **U.**—Monaghan (Emyvale). Armagh (Armagh, in garden, *Johnson*). Donegal (Fern and Keel Loughs; Largy River). Antrim (Portmore near Lough Neagh).

*Distribution.*—Common in Britain, ranging to the Shetlands. According to Ulmer, there is probably only one Palearctic species of this genus. It is widely distributed in northern and central Europe, and apparently ranges to eastern Siberia (*McLachlan*).

**\**Grammotaulius atomarius* (Fab.).**

CONNAUGHT. LEINSTER. ULSTER.

**C.**—Roscommon (Mote Park, *Halbert*). Sligo (*Johnson*). **L.**—Wicklow (Roundwood, October, *Halbert*). Louth (Castlebellingham! *Thornhill*). **U.**—Monaghan (Emyvale, *Morton*). Armagh (Mullinure, *Johnson*).

*Distribution.*—Great Britain (ranges from Devonshire to Perthshire at least). Abroad it is found from Lapland to Italy (Naples, *McLachlan*); Iceland.

***Glyphotaelius pellucidus* (Retz.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Waterford (near Cappoquin). Limerick. **C.**—Mayo (Croft Lough; in plantation near Convent, Westport). **L.**—Wexford (Johnstown Castle grounds). Dublin (Lucan). Westmeath (Waterstown). **U.**—Monaghan (Glaslough). Armagh (Loughgall).

*Distribution.*—Devonshire to Inverness, and nearly all over Europe except Lapland and Spain (*McLachlan*).

***Limnophilus rhombicus* (L.).**

CONNAUGHT. LEINSTER. ULSTER.

**C.**—Roscommon (Mote Park). Mayo (Carrowbeg River). Sligo (Markree Castle). **L.**—Wexford (Edenvale). Dublin (Dundrum). Louth (Castlebellingham). **U.**—Armagh. Donegal (near Kilmacrennan; River Lennan).

*Distribution.*—Great Britain (common, ranging to the Shetlands). Nearly the whole of Europe (Lapland to central Spain), except extreme south, extending into Eastern Siberia, and Turkestan (*McLachlan*).

***Limnophilus flavicornis* (Fab.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle; Dinish; Flesk and Deenagh Rivers). **C.**—Mayo (Carrowbeg River, Westport). Sligo (near Sligo). **L.**—Wexford (Johnstown Castle grounds). Wicklow (Altidore). Dublin (Lucan; Santry; &c.). Westmeath (Moate; Bog of Allen). **U.**—Monaghan (Glaslough and Emyvale). Armagh (Acton Glebe; Lough Gilly; &c.).

*Distribution.*—Great Britain (common and widely spread). Northern and central Europe.

**\**Limnophilus decipiens* (Kol.).**

ULSTER.

**U.**—Monaghan (Glaslough, *Entom. Monthly Mag.*, 1892).

This species was found fairly commonly by Mr. K. J. Morton, at Kelvey Lough, a small, deep lake near the above-mentioned locality.

*Distribution.*—England (rare, London district, Haslemere, Norwich). Not recorded from Scotland. Widely distributed in Europe, ranging from Finland to the Balkans. Siberia (*McLachlan*).

***Limnophilus marmoratus* Curt.**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Loo Bridge; Ross Castle; Cloghereen; Coppagh Glen; Gap of Dunloe; Kilbrean Lough; Dinish). Waterford (between Cappoquin and Lismore; Cappagh Lough). **C.**—Galway (Salthill; Castlekirk; Cong). Roscommon (Yew Point). Mayo (common in the Westport and Newport districts). Sligo (Rosses Point). **L.**—Wexford (Edenvale; Killurin: Johnstown Castle grounds). King's County (Edenderry). Dublin (Tolka at Glasnevin). Westmeath (Shannon; Killinure; Waterstown). **U.**—Monaghan (Glaslough and Emyvale). Armagh (Churchhill; Mullinure, &c.). Antrim (gas lamps at Belfast). Donegal (Coxtown; Coolmore; common on lakes in the Kilmacrennan district).

Common.

*Distribution.*—Great Britain (common, Devonshire to Shetlands). Lapland to France; Spain; and central Italy.

***Limnophilus stigma* Curt.**

MUNSTER. LEINSTER. ULSTER.

**M.**—Kerry (Killarney, *McLachlan*, 1862). **L.**—Westmeath (Waterstown and River Shannon). **U.**—Armagh (Birches).

*Distribution.*—Widely spread in Great Britain, ranging from Kent to



Inverness-shire. Northern and central Europe, excepting the boreal parts (*McLachlan*).

***Limnophilus xanthodes* McLach. (*L. borealis* Kol. nec Zett.).**

MUNSTER. ULSTER.

**M.**—Kerry (*L. borealis*, taken by Birchall, *McLachlan* in *Entom. Annual*, 1864). Monaghan (Glaslough, not common, *Morton*). Fermanagh (*L. borealis*, near Enniskillen, *McLachlan*, *Entom. Annual*, 1862). Armagh (Lowry's Lough and Camlough, *Johnson*).

*Distribution*.—Great Britain (local and not uncommon in the fens of the east, *McLachlan*; extending northwards to Dumfries, *Morton*). Northern and central Europe. Finland; Sweden; Russia; Germany; Austria; Hungary; &c.

***Limnophilus lunatus* Curt.**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Cloghereen; Gleng; Horse's Glen; Deenagh River). Waterford (Dromana and Cappoquin). **C.**—Roscommon (Yew Point). Mayo (Doogan, Small and Ballin Loughs; Newport and Carrowbeg Rivers). Galway (Castlebar; near Maam; Clonbrock). **L.**—Wicklow (Roundwood). Dublin (Tolka at Glasnevin; Lucan). Westmeath (Shannon; Coosan; Twy River; Lough Ree). **U.**—Monaghan (Glaslough and Emyvale). Armagh (Churchhill, Lough Gilly, &c.). Antrim (gas lamps at Belfast). Donegal (Coolmore; Ardara). Common.

*Distribution*.—In Great Britain this species is found from Devonshire to North Shetland. Spread over most of Europe (except the Spanish peninsula); Finland; North Persia; Asia Minor.

***Limnophilus politus* McLach.**

MUNSTER.

**M.**—Kerry (Killarney, *McLachlan*, *Trans. Entom. Soc.*, p. 38, *London*, 1865). Apparently rare, and has not been recently met with in Ireland.

*Distribution*.—Great Britain (very local, extending as far north as the Clyde district). Occurs over a great part of Europe (except Spain), and northern Asia.

**\**Limnophilus fuscinervis* Zett.**

CONNAUGHT.

**C.**—Mayo (Castlebar Lough, June 17th, 1909, coll. *Halbert*, see *Morton* in *Entom. Monthly Mag.* (2) xx., p. 233, 1909).

The first British specimen of this interesting species was captured at Castlebar Lough on a recent expedition, organized by Mr. R. Ll. Praeger, to investigate the fauna and flora of Clare Island and the surrounding

district. It was found on the south shore of the lake, which is also called Lough Lannough, at its eastern extremity, not far from the town of Castlebar.

*Distribution*.—Great Britain (range unknown).

As pointed out by Mr. K. J. Morton, the distribution of *L. fuscinervis* is northern and south-eastern. It has been recorded by Mr. McLachlan from Lapland, Finland, Sweden, Lithuania (Minsk), Germany (where it is evidently widely spread), Sarepta. A variety *solutus*, McLach., is recorded from Sarepta and Persia ("Trichoptera of the European Fauna"). Denmark (*Petersen*).

***Limnophilus ignavus* (Hagen) McLach.**

MUNSTER. CONNAUGHT. LEINSTER.

**M.**—Waterford (Cappoquin). **C.**—Mayo (Ballin and Mount Brown Loughs; Carrowbeg River). **L.**—Wexford (Edenvale and Rosslare). Westmeath (Waterstown and Shannon near Athlone).

*Distribution*.—Great Britain ("very rare in the north," *McLachlan*; ranges from north Shetland as far south as Hereford at least). Northern and central Europe, from Finland to Switzerland.

**\**Limnophilus nigriceps* (Zett.).**

ULSTER.

**U.**—Armagh (Lowry's Lough, *Johnson*).

Several specimens of this rare species were collected during the month of September at Lowry's Lough (*McLachlan*, *Entom. Monthly Mag.*, xxix., 1893, p. 287).

*Distribution*.—Great Britain (local; north of England, Edinburgh, and Glasgow districts to Perthshire). Northern and central Europe. Lapland; Vienna; &c; Turkestan. According to Morton, this is a local species both in Great Britain and on the Continent.

***Limnophilus centralis* Curt.**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Killarney; Ross Castle; Gap of Dunloe; Glencar). Cork (Glandore). Waterford (Glenshelane). **C.**—Galway (near Maam). Mayo (Mount Brown Lough and Carrowbeg River). **L.**—Kilkenny. Wexford (Edenvale; banks of Slaney near Wexford). Dublin (Howth). **U.**—Armagh (Mullinure). Donegal (Clonkillybeg; Loughs Akiboon, Fern, and Keel).

*Distribution*.—Great Britain (common, Devonshire to Inverness). Isle of Man. Probably generally distributed in Europe (*McLachlan*). Not included by Navás in the Spanish fauna (1908).

***Limnophilus vittatus* (Fab.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle; Ardagh Lough; Deenagh River). Waterford (Cappoquin and Glenshelane). **C.**—Galway (Castlekirk; Ballinasloe; Tuam; Cong). Roscommon (Yew Point). Mayo (Mount Brown and Kip Loughs). **L.**—Wexford (Johnstown Castle grounds). Wicklow (Roundwood and Enniskerry). Dublin (Rush; Tolka at Glasnevin). Westmeath (Shannon; Bog of Allen; Moate). **U.**—Monaghan (Emyvale). Armagh (Mullinure). Donegal (Lough Fern).

*Distribution.*—Great Britain (Devonshire to North Shetland). Common throughout Europe, extending from Sicily and Spain to Lapland. Asia Minor.

***Limnophilus affinis* Curt.**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle; Boreen-a-Morave; Deenagh River). Waterford (Dromana). **C.**—Galway (Ballinasloe). Roscommon (Yew Point). Mayo (Ballin Lough). **L.**—Wexford (Edenvale; Rosslare; Johnstown Castle grounds; Slaney near Killurin). Westmeath (Shannon; Coosan; Hare Island in Lough Ree). **U.**—Monaghan (Glaslough and Emyvale). Armagh (Lowry's Lough, &c.). Donegal (River Lennan; Lough Keel; Largy River; Coolmore).

*Distribution.*—Common in Britain from Devonshire to North Shetland. Abroad it is widely spread, occurring in Iceland, Finland, and other parts of Europe; Amur Land; north Persia; Madeira; &c.

According to McLachlan, this is probably the most widely distributed of the Palaearctic Caddis-flies.

***Limnophilus auricula* Curt.**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (common in the Killarney district). Waterford (Dromana and near Cappoquin). **C.**—Galway (Salthill; Maam; Cong; Ballinasloe; Castlekirk). Mayo (Mount Brown, Kip, and Cogaula Loughs; Carrowbeg River). Sligo (Markree Castle). **L.**—Wexford (Rosslare; Johnstown Castle grounds). Wicklow (Lough Dan and Enniskerry). Dublin (Donabate). Westmeath (common in the Athlone district). Louth (Dundalk). **U.**—Monaghan (Emyvale and Glaslough). Armagh (Churchhill; Lough Gilly; Lough Gall; &c.). Donegal (Coxtown).

*Distribution.*—Ranges in Great Britain from Devonshire to the Shetlands. Occurs also in the Isle of Man. Common in northern and central Europe. Spain (*Navás*).

***Limnophilus griseus* (L.).**

CONNAUGHT. LEINSTER. ULSTER.

**C.**—Galway (near Maam; Ballinasloe). Mayo (Kip Lough and Carrowbeg River). Sligo (Markree Castle). **L.**—Westmeath (Coosan; Bog of Allen). **U.**—Donegal (Cloghan; Cottian; Gorteen, Muethin, and Keel Loughs).

*Distribution.*—Great Britain (Devon to north Shetlands). Isle of Man. Jersey. Probably occurs in most parts of Europe from Lapland to the Caucasus (not recorded from Spain); Iceland; Färöes; &c. Also in Siberia (*McLachlan*).

***Limnophilus extricatus* McLach.**

CONNAUGHT. LEINSTER. ULSTER.

**C.**—Roscommon (Summerhill). **L.**—Westmeath (Bog of Allen). **U.**—Donegal (Lough Akiboon).

*Distribution.*—Great Britain (ranges from the south of England to Inverness). Northern and central Europe.

***Limnophilus hirsutus* (Pict.).**

CONNAUGHT. LEINSTER. ULSTER.

**C.**—Mayo (Knappagh Lough and Carrowbeg River). **L.**—Dublin. Westmeath (Shannon and Coosan Point). **U.**—Monaghan (Glaslough and Emyvale). Donegal (Coxtown; Lough Keel; near Kilmacrennan).

*Distribution.*—Great Britain (south of England to Inverness). Guernsey; Holland; Switzerland; Germany; France; Spain.

***Limnophilus luridus* Curt.**

CONNAUGHT. LEINSTER. ULSTER.

**C.**—Sligo (Markree Castle). **L.**—Westmeath (Shannon; Coosan). **U.**—Donegal (Lough Keel; River Lennan; Cottian; Clonkillybeg).

*Distribution.*—Great Britain (local; Hampshire to Perthshire at least). Finland; Holland; Belgium; Germany (Hamburg, *Ulmer*).

***Limnophilus sparsus* Curt.**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (common in the Killarney district; Kenmare). Cork (Ballygriffin woods; Glandore). Waterford (Dromana; Cappagh Lough). **C.**—Galway (Salthill; Cong; Ballinasloe). Mayo (common in the Westport and Newport districts). Sligo (Markree). **L.**—Wexford (Johnstown Castle grounds). Wicklow (Roundwood and Enniskerry). Dublin (Donabate; River Dodder near Tallaght; Harold's Cross; brackish pond at Sutton).

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Westmeath (Shannon; Killinure; Twy River; Waterstown). **U.**—Monaghan (Emyvale). Armagh (Lough Gilly; Acton). Donegal (Coolmore; Bruckless).

*Distribution.*—Abundant in Great Britain, ranging from Devonshire to the Shetlands and Hebrides. Isle of Man. Northern and central Europe; Spain; Färöes.

**\*Anabolia nervosa** (Leach) Curt.

LEINSTER. ULSTER.

**L.**—Wicklow (Roundwood, *Halbert*). Dublin (River Tolka near Dublin, *Halbert*; Harold's Cross, *Carpenter*). Louth (Castlebellingham, *Thornhill*). **U.**—Armagh (near Armagh; Lowry's Lough; Tynan; and Maghery, *Johnson*).

*Distribution.*—Widely spread in Great Britain (New Forest, Strathglass, &c.). Recorded as generally abundant in western Europe.

**Stenophyllax stellatus** (Curt.).

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Cloghereen; The Glen in Deer Park). Tipperary (Cahir). **C.**—Sligo (near Sligo). **L.**—Dublin (Lucan). **U.**—Donegal (Coolmore; Dunleury; Gweedore; Lough Keel).

*Distribution.*—Great Britain (Devonshire, Inverness, &c.). Widely spread over Europe (except Spain), and probably more abundant in the north, extending from Lapland to north-western Siberia (*McLachlan*).

**Stenophylax latipennis** (Curt.) (*S. radiatus* Ramb.).

LEINSTER.

**L.**—Louth (Carlingford).

*Distribution.*—In Great Britain this species extends from Devonshire to the Shetlands. Abroad it is found from Lapland (*Sahlberg*) to Italy and Spain.

**Stenophylax permistus** McLach. (*S. concentricus* McLach., nec Zett.).

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Clare (Lahinch). **C.**—Sligo (near Sligo). **L.**—Dublin (Sandymount, flying to light in houses; Portmarnock; Rathmines). Westmeath (Killucan). **U.**—Armagh (Armagh). Antrim (gas lamps at Belfast).

*Distribution.*—Common in Great Britain (Devonshire to the Shetlands). Probably spread all over Europe, ranging from Lapland to Spain.

**Micropterna sequax** McLach. (*M. striata* Pict. nec Linn.).

LEINSTER. ULSTER.

**L.**—Dublin (Dodder banks between Templeogue and Tallaght). **U.**—Tyrone (Favour Royal). Armagh. Donegal (Coolmore).

*Distribution*.—Great Britain (not common, but ranging from Devon to Inverness). Jersey; Finland; Sweden; France; Germany; Switzerland (*Ris*); Austria; south Russia; Corsica.

***Micropterna lateralis* (Steph.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Torc Cascade). **C.**—Roscommon (Mote Park). Sligo (near Sligo and Keshcorran). **L.**—Kilkenny (Johnstown, *Haliday* ms.). Dublin (Howth). Westmeath (Shannon). **U.**—Tyrone (Favour Royal and Alta-diawan). Armagh (Mullinure and Scarva). Donegal (near Kilmacrennan; Coolmore).

*Distribution*.—Great Britain (widely distributed, New Forest to Unst). Northern and central Europe.

***Halesus radiatus* (Curt.).**

MUNSTER. CONNAUGHT. LEINSTER.

**M.**—Kerry (Cloghereen; Horse's Glen). **C.**—Galway (Maam River). **L.**—Wicklow (Roundwood and Lough Dan). Dublin (Howth). Louth (Drogheda).

*Distribution*.—Great Britain (Devonshire to Shetlands). Jersey; northern and central Europe; Spain.

***Drusus annulatus* Steph.**

CONNAUGHT.

**C.**—Galway (Castlekirk).

*Distribution*.—According to McLachlan, this is an alpine species inhabiting clear torrents in rocky and mountainous districts. It is widely spread in Britain, having been found in Devonshire and in the Shetlands. Abroad it would appear to be local, occurring in Germany (Schwarzwald, Harz, Riesengebirge, &c. *Ulmer*); Belgium; France.

**\**Chaetopteryx villosa* (Fab.) (*C. tuberculosa* Pict.).**

MUNSTER. LEINSTER. ULSTER.

**M.**—Cork (Carrigrohane! *Standen*). **L.**—Kilkenny ("Dec. 1, Johnstown," *Haliday* ms.). Wicklow (Roundwood and Lough Dan, October, *Halbert*). **U.**—Antrim (lakes at Fair Head, September, *Halbert*).

A late autumn species, which has probably been overlooked in many localities.

*Distribution*.—Great Britain (south of England to Perthshire and Inverness); Russian Lapland; Finland; Scandinavia; western Russia; Germany; Austria; Belgium; Switzerland; France.

**\*Apatania Wallengreni** McLach. (*A. vestita* Kol.).

## ULSTER.

**U.**—Donegal (Cottian, females probably referable to this species, *King*).

*Distribution.*—Great Britain (English Lake District to Perthshire at least). Lapland; Finland. Ulmer does not include this species amongst the German Trichoptera (*Die Süßwasserfauna Deutschlands*, 1909).

**Apatania fimbriata** (Pict.).

## MUNSTER.

**M.**—Kerry (Windy Gap near Kenmare; lakes in the Gap of Dunloe; Coppagh Glen; Garagarry Lough).

Writing of the occurrence of this species in the Gap of Dunloe, where it was first discovered in the British Isles, Mr. Morton says: "In Ireland it occurred at spots where the margins of the lakes were lined with huge blocks of rock, and we took it at rest on or flying amongst the rocks, and by sweeping the herbage on the banks. Usually at such places the only aquatic vegetation was a scattered growth of the pretty *Lobelia Dortmanna*" (*Entom. Monthly Mag.*, xxiv., 1887, p. 118).

*Distribution.*—This species is unknown in Great Britain. Abroad it inhabits the mountain regions of central Europe (*McLachlan*); Germany (Harz, Thüringen, &c.); France (Chamounix; Savoy; Haute Loire); Austria (Sudetic Chain; Carinthia; &c.); and probably other localities.

**SERICOSTOMATIDAE.****Sericostoma personatum** (Spence).

## MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle; Deenagh River; Muckross; Cloghereen; Gap of Dunloe; Parknasilla). Waterford (Cappoquin). **C.**—Galway (Cong). Mayo (Mount Brown; Cogaula and Knappagh Loughs; Carrowbeg River). **L.**—Wexford (Forth Mountains). Wicklow (Enniskerry). Dublin (River Dodder between Templeogue and Tallaght). Westmeath (Shannon; Coosan). **U.**—Monaghan (Glaslough). Donegal (Coxtown; Keel, Sproule's, and Fern Loughs; Glenbeagh). Armagh (Coney Island in Lough Neagh).

*Distribution.*—Great Britain (common, Devon to Inverness). Isle of Man. Northern and central Europe.

**Goëra pilosa** (Fab.) (*G. flavipes* Curt.).

## MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle; River Flesk). Cork (Mallow). Waterford (Lismore). **C.**—Galway (Castlekirk). Roscommon (Yew Point). Mayo (Doo,

Cushinsheean, Mount Brown and Kip Loughs; Carrowbeg River). Sligo (near Sligo). **L.**—Wexford (Edenvale). Wicklow (Calary). Westmeath (Coosan Point; Shannon; near Athlone; &c.). **U.**—Monaghan (Glaslough and Emyvale). Donegal (Coolmore; Fern and Irvine's Loughs; Clonkillybeg). Armagh (Coney Island in Lough Neagh).

*Distribution.*—Great Britain (Devonshire, to the south of Scotland). Northern and central Europe.

***Silo pallipes* (Fab.).**

MUNSTER. LEINSTER. ULSTER.

**M.**—Kerry (Devil's Punch-bowl; Muckcross; Deenagh and Flesk Rivers; Torc; Kenmare; Loo Bridge). Cork (Glandore). Waterford (Glenshelane and Dromana). **L.**—Wexford (Edenvale). Wicklow (Enniskerry and Fassaroe). Dublin (River Dodder at Templeogue). **U.**—Armagh (near Armagh). Donegal (Ardara; Loughs Salt and Reelan; Lennan Bridge). Antrim (Colin Glen).

*Distribution.*—Great Britain (common; Devon and Kent to Inverness). Generally distributed in Europe from Lapland to western Russia, and France. Not recorded from Spain or Portugal.

***Silo nigricornis* (Pict.) (*S. fumipennis* McLach.).**

MUNSTER. CONNAUGHT. LEINSTER.

**M.**—Kerry (Deenagh and Flesk Rivers; Dinish). **C.**—Mayo (Mount Brown Lough and Carrowbeg River). **L.**—Dublin (River Dodder at Templeogue). Westmeath (Ballykeeran and Killinure).

*Distribution.*—Britain (local in the south, *McLachlan*). Germany; Austria; Switzerland; Holland; Belgium; France (Basses Pyrénées, &c.).

***Crunoecia irrorata* (Curt.).**

MUNSTER. LEINSTER. ULSTER.

**M.**—Kerry (Torc Cascade). Waterford (Dromana and Cappoquin). **L.**—Wexford (Edenvale). **U.**—Donegal (Sproule's Lough). Antrim (Colin Glen).

*Distribution.*—Great Britain (Devon to Inverness). Germany; Switzerland; France (Pyrenees, &c.) Transylvania, to the Carpathians.

***Lepidostoma hirtum* (Fab.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle; Dinish; Cloghereen; Deenagh River, &c.). Waterford (Lismore; Salterbridge; and Cappoquin). **C.**—Galway (Maumwee Lough and Castlekirk). Roscommon (Yew Point; Summerhill).



Mayo (Carrowbeg River). Sligo (near Sligo). **L.**—Westmeath (Shannon; Coosan; Wineport; Waterstown). **U.**—Donegal (Dunleury Lough; Lennan Bridge; Cottian; Gweedore). Antrim (Cave Hill near Belfast; Shane's Castle, Lough Neagh).

*Distribution.*—Great Britain (Devon to Shetlands). Probably all over Europe as far north as Lapland; Spain (*Navás*).

#### LEPTOCERIDAE.

##### *Beraea pullata* (Curt.).

CONNAUGHT. LEINSTER. ULSTER.

**C.**—Mayo (Carrowbeg River). **L.**—Wexford (Johnstown Castle grounds; Edenvale). Dublin (marshy places on Lambay Island). **U.**—Armagh (Lough Gilly and Mullinure).

*Distribution.*—Great Britain (Devonshire; Yorkshire; North Wales; Glasgow district; &c.). Isle of Man. Widely spread in western Europe (Norway to Portugal).

##### *Beraea maurus* (Curt.).

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (near Kenmare; Ardagh; Cloghereen; Dinish; Tore). Cork (Glandore). **C.**—Mayo (Carrowbeg River and Knappagh Lough). **L.**—Wexford (Killurin and Edenvale). **U.**—Antrim (Cave Hill near Belfast).

*Distribution.*—Great Britain (Devon to Inverness). Scandinavia (not in Lapland) to Spain and northern Italy.

##### *Molanna palpata* McLach.

LEINSTER. ULSTER.

**L.**—Westmeath (occurs in considerable numbers along the Shannon between Athlone and Lough Ree, *King*). **U.**—Armagh (Lowry's Lough near Armagh, in June, *Johnson*).

The occurrence of this species on the River Shannon is worthy of note. In Scotland it frequents peaty lakes.

*Distribution.*—Great Britain (Perthshire; Inverness; West Hebrides). Northern Lapland; Finland (*Sahlberg*); Russia; Siberia (district of the Yenisei, *Sahlberg*). Not included by Ulmer in the German fauna (1909).

##### *Odontocerum albicorne* (Scop.).

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Killarney, *Hagen*; Deenagh River; Horse's Glen). Waterford (Glenshelane and Cappoquin). **C.**—Mayo (Mount Brown and Cogaula

Loughs). **L.**—Wexford (Edenvale). **U.**—Donegal (Clonkillybeg; Loughs Reelan and Gorteen; River Lennan; Glenbeagh; Cottian).

*Distribution.*—Great Britain (locally common, Devon to Inverness). Isle of Man. Recorded from many localities in central and southern Europe.

**Leptocerus nigro-nervosus** (Retz).

MUNSTER. ULSTER.

**M.**—Kerry (Ross Castle and Garagarry Lough). **U.**—Donegal (Salt and Gorteen Loughs).

*Distribution.*—Great Britain (widely spread; Thames; Rannoch; Outer Hebrides; &c.). Northern and central Europe, reaching Lapland.

**Leptocerus fulvus** (Ramb.).

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle; Cloghereen; Deenagh River; Gap of Dunloe; Garagarry Lough). **C.**—Galway (Castlekirk and Maumwee). Roscommon (Yew Point). Mayo (Prospect Lough and Carrowbeg River). **L.**—Westmeath (Shannon; Coosan; Hare Island). **U.**—Monaghan (Glaslough and Emyvale). Donegal (Loughs Fern and Sproule).

*Distribution.*—Great Britain (south of England to the Shetlands). Russian Lapland to central Europe; Siberia.

**Leptocerus senilis** (Burm.).

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle; Deenagh River; Coppagh Glen). Cork (Glandore). **C.**—Galway (Castlekirk). Mayo (Knappagh and Prospect Loughs; Newport River). **L.**—Westmeath (Shannon; Coosan; Twy River). **U.**—Donegal (Coolmore; Loughs Fern and Sproule; Clonkillybeg).

*Distribution.*—Great Britain (south of England to Wigtownshire). Finland; Russia; Germany; Belgium; Holland; France; Siberia.

**Leptocerus albo-guttatus** Hagen.

CONNAUGHT. LEINSTER. ULSTER.

**C.**—Mayo (Knappabeg Lough). **L.**—Kilkenny. Westmeath (on the Shannon below Athlone). **U.**—Monaghan (Emyvale). Donegal (Lennan Bridge; Lough Fern; Cottian).

*Distribution.*—Great Britain (Hants to Inverness, at least). Germany; Holland; Belgium; France; Portugal.

**Leptocerus annulicornis** Steph.

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle; Deenagh River; Windy Gap). **C.**—Roscommon (Shannon near Athlone). **L.**—Westmeath (Shannon near Athlone). **U.**—Donegal (Gorteen and Fern Loughs; Lennan River).

*Distribution.*—Great Britain (south of England to Perthshire at least). Finland; Germany; Saxony; Holland; Bohemia).

**Leptocerus aterrimus** Steph.

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle; Coppagh Glen; Ardagh Lough; Muckcross). Waterford (Cappagh Lough). **C.**—Roscommon (Yew Point and Summerhill). Mayo (common in the Westport and Newport districts). **L.**—Wexford (Rosslare; Edenvale; Johnstown Castle grounds). Westmeath (Shannon; Coosan; Wineport; Twy Lough). **U.**—Monaghan (Glaslough and Emyvale). Armagh (Lowry's Lough near Armagh). Donegal (common in the Kilmacrennan district).

*Distribution.*—Great Britain (south of England to Inverness). Widely spread in Europe, ranging to Finland. Not recorded from Spain or Portugal.

**Leptocerus cinereus** Curt.

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (common in the Killarney and Muckcross districts; Devil's Punch-bowl; Gap of Dunloe, &c.). Cork (Mallow). Waterford (Lismore; Dromana; Cappoquin; Glenshelane). **C.**—Galway (Castlekirk; Maumwee Lough). Roscommon (Yew Point). Mayo (common on various loughs in the Westport and Newport districts). **U.**—Monaghan (Glaslough and Emyvale). Armagh (Milford; Lowry's Lough; Coney Island, &c.). Donegal (Coolmore; common in the Kilmacrennan district; Loughs Keel, Gorteen, &c.).

*Distribution.*—Great Britain (Cornwall to north Shetlands). Finland to Portugal, and eastwards to Russia.

**Leptocerus albifrons** (L.).

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle; Deer Park; Deenagh River; Coppagh Glen; Gap of Dunloe; Dinish). Cork (Mallow). Waterford (Dromana and Cappoquin). **C.**—Galway (Castlekirk; Lough Corrib; Maam). Roscommon (Yew Point and Summerhill). Mayo (Mount Brown and Knappabeg Loughs;

Newport River). **L.**—Dublin (Lucan demesne). Westmeath (Waterstown; Coosan Point; Hare Island; Ballykeeran). **U.**—Monaghan (Glaslough). Donegal (Lennan Bridge).

*Distribution.*—Great Britain (Devon to Inverness). Northern and central Europe.

**Leptocerus commutatus** (Rostock) McLach.

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (common in the Killarney district; near Kenmare; Loo Bridge). **C.**—Galway (Castlekirk). **L.**—Dublin (Lucan demesne). Westmeath (Glasson and Coosan Point). **U.**—Monaghan (Emyvale). Donegal (Ardara; Lennan Bridge; Lough Fern; Cottian).

*Distribution.*—Great Britain (Devonshire to Perthshire). Finland; Germany; Saxony; Belgium; France.

**Leptocerus bilineatus** (L.).

LEINSTER.

**L.**—Dublin (Lucan). Westmeath (Shannon).

*Distribution.*—Great Britain (local; Devon to Inverness). Lapland; Germany; France; Austria; Switzerland; Russia; Turkestan.

**Leptocerus dissimilis** Steph.

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle; Devil's Punch-bowl; Deenagh River; Glenna; &c.). **C.**—Galway (Castlekirk). Roscommon (Yew Point). Mayo (Carrowbeg River). **L.**—Dublin (Lucan). Westmeath (Shannon side; Coosan Point; Waterstown demesne; Wineport). **U.**—Monaghan (Glaslough and Emyvale). Donegal (Gorteen, Reelan, and Fern Loughs; Glenbeagh; Lennan River; Cottian).

*Distribution.*—Great Britain (Devon to Inverness). Finland; Sweden; Russia; Germany; France.

**Mystacides nigra** (L.).

ULSTER.

**U.**—Monaghan (Glaslough). Down (River Lagan).

*Distribution.*—Great Britain (south of England to Inverness). Probably all over Europe, ranging from Lapland to Spain.

**Mystacides azurea** (L.).

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (common in the Killarney district; Loo Bridge, &c.). Cork

[O\*]

(Glandore and Mallow). **C.**—Galway (Castlekirk and Maumwee Lough). Mayo (common in the Westport and Newport districts). **L.**—Wexford (Johnstown Castle grounds; Edenvale). Dublin (Lucan demesne; Tolka at Glasnevin). Westmeath (Coosan Point). **U.**—Monaghan (Glaslough). Armagh (Coney Island and Maghery, Lough Neagh). Donegal (Ardara; Kilmacrennan district, common).

*Distribution.*—Great Britain (Devonshire to the Shetlands). Widely distributed in western Europe; Lapland to Spain.

***Mystacides longicornis* (L.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle). Cork (Glandore). Waterford (Cappagh Lough). **C.**—Roscommon (Summerhill). Mayo (Westport and Newport districts). **L.**—Westmeath (Shannon; Coosan Point; Twy Lough; Bog of Allen; Deravaragh). **U.**—Monaghan (Glaslough and Emyvale). Donegal (Loughs Fern and Keel). Armagh. Antrim (Portmore Lough, *Haliday* ms.).

*Distribution.*—Great Britain (Devon to Inverness). Northern and central Europe.

**\**Triaenodes conspersa* (Ramb.).**

LEINSTER.

**L.**—Wexford (Rosslare, *King*).

*Distribution.*—England (rare; has been found in the counties of Devon, Hants, and Worcester, *Morton*). Finland; Sweden; Germany; Saxony; France; Spain; Sicily.

***Triaenodes bicolor* (Curt.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle; Ardagh Lough; Windy Gap). Cork (Glandore). Waterford (Cappagh Lough). **C.**—Galway (Castlekirk, Maumwee Lough). Mayo (Westport and Newport districts, common). **L.**—Wexford (Johnstown Castle grounds). **U.**—Monaghan (Glaslough and Emyvale). Donegal (Sproule's and Askerry Loughs; Lennan River; Glenbeagh). Armagh (near Armagh; Coney Island in Lough Neagh).

*Distribution.*—Great Britain (Devon to Inverness). General over northern and central Europe.

**\**Adicella reducta* (Steph.) McLach.**

MUNSTER.

**M.**—Kerry (Killarney, *Eaton*). Cork (Glandore, *Halbert*). Waterford (Blackwater near Lismore, *Halbert*).

Collected by Rev. A. E. Eaton in the Killarney district, June 12, 1902, and recorded by Mr. McLachlan (*Entom. Monthly Mag.*, 1903, p. 14).

*Distribution*.—Great Britain (small rivers and streams, especially in the south, *McLachlan*; Cornwall to Kent; North Wales and Perthshire, &c.). Abroad it is found in Germany (*Ulmer*); Saxony; Switzerland; France; Spain; Portugal. Ranges eastwards to the Carpathians (*Morton*).

***Oecetis ochracea* (Curt.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle; Ardagh Lough; Deenagh River). Cork (Glandore). **C.**—Galway (Cong). Roscommon (Yew Point). Mayo (Knappagh, Ballin and Kip Loughs). **L.**—Westmeath (Shannon; Coosan Point; Wineport; Waterstown; Bog of Allen). **U.**—Monaghan (Glaslough and Emyvale). Armagh (Lowry's Lough, &c.). Donegal (Loughs Fern, Gorteen, and Reelan; Clonkillybeg).

*Distribution*.—Great Britain (south of England to the Shetlands). Northern and central Europe.

***Oecetis furva* (Ramb.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle; Deenagh River; Dinish; Ardagh Lough; Gap of Dunloe). **C.**—Galway (Castlekirk and Maumwee Lough). Mayo (Doogan, Broad, Knappagh, and Prospect Loughs; Bleachyard). **L.**—Westmeath (Coosan; Killinure; Waterstown demesne). **U.**—Monaghan (Glaslough and Emyvale). Donegal (Sproule's Lough).

*Distribution*.—Great Britain (south of England to Wigtownshire at least). Finland; Germany; Holland; Switzerland (*Ris*); France.

***Oecetis lacustris* (Pict.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle; Deenagh River; Torc Cascade; Ardagh Lough; Horse's Glen). **C.**—Galway (Castlekirk). Roscommon (Yew Point). Mayo (Doogan, Prospect, and Knappagh Loughs). **L.**—Wexford (Johnstown Castle grounds). Westport (Shannon; Coosan Point; Wineport; Hare Island).

*Distribution*.—Great Britain (occurs as far north as Strathglass). Probably over most of Europe (not in Spain). Extending into N.-W. Siberia.

***Oecetis notata* (Ramb.).**

MUNSTER. LEINSTER.

**M.**—Waterford (near Lismore). **L.**—Dublin (Lucan demesne).

*Distribution*.—Great Britain (Surrey to Inverness). Finland to Germany (Schlesien and Saxony); France; and Austria.

***Oecetis testacea* (Curt.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle; Flesk and Deenagh Rivers; Muckcross; Dinish; Torc; Cloghereen). **C.**—Mayo (Mount Brown Lough). **L.**—Wexford (Edenvale and Killurin). Wicklow (Enniskerry). Westmeath (Shannon; Killinure; Twy Lough; Waterstown). **U.**—Donegal (Keel, Gorteen, and Akiboon Loughs; Cottian; Glenbeagh; Clonkillybeg; Lennan Bridge).

*Distribution*.—Great Britain (south of England to Inverness). Finland (rare); Sweden; Holland; Germany; Saxony; Switzerland; France (Pyrenees); Portugal.

***Setodes argentipunctella* McLach.**

MUNSTER.

**M.**—Kerry (Muckcross Abbey and Ross Castle).

This local species was captured by the Rev. A. E. Eaton, on the 18th of August, not far from the Abbey at Muckcross. He reports it as swarming up in great quantities from the lake (*Entom. Monthly Mag.*, 1877). It also occurs in great profusion at Ross Castle.

*Distribution*.—Great Britain (occurs in the English Lake District and in Wigtownshire). Abroad this local species has recently been found in Belgium; south-western Germany (Hesse, *Ulmer*); Switzerland (*Ris*), and Navás records it from Fuencaliente in southern Spain (1908).

**HYDROPSYCHIDAE.**

***Hydropsyche pellucidula* (Curt.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Cloghereen and Deenagh River). **C.**—Galway (Salthill). **L.**—Westmeath (Shannon). **U.**—Donegal (Reelan, Gorteen, Sproule's, and Irvine's Loughs; Lennan and Largy Rivers; Cottian).

*Distribution*.—Great Britain (Devonshire to Rannoch at least). Found all over Europe, Lapland to the Mediterranean Islands; Asia Minor.

***Hydropsyche instabilis* (Curt.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Deenagh River; Cloghereen; Torc Cascade; Horse's Glen; Gap of Dunloe; &c.). **C.**—Galway (Lough Corrib near Galway; Cong; Maam River). Mayo (Mount Brown, Croft, Carrowbeg, Brocka, and Cogaula

Loughs; Carrowbeg River). **L.**—Kilkenny. King's County (Edenderry). Wicklow (Enniskerry). Dublin (Lucan; River Dodder between Templeogue and Tallaght). Westmeath (Shannon and Ballykeeran). Louth (Carlingford). **U.**—Monaghan (Emyvale). Donegal (Bundoran; Ardara; Cottian; Lennan Bridge; Lough Reelan; &c.).

*Distribution.*—Great Britain (Devonshire to Strathglass). Isle of Man. Widespread, ranging from Finland to the Pyrenees, Portugal, and central Italy.

***Hydropsyche angustipennis* (Curt.).**

MUNSTER. CONNAUGHT. LEINSTER.

**M.**—Kerry (near Kenmare). Waterford (near Lismore). **C.**—Mayo (Mount Brown and Knappagh Loughs). **L.**—Westmeath (Twy River).

*Distribution.*—Great Britain (Devonshire to the Clyde district). Found in Finland and over most of Europe, but not recorded from Spain.

***Hydropsyche guttata* (Pict.).**

MUNSTER. LEINSTER.

**M.**—Cork (Mallow). **L.**—Westmeath (Shannon).

*Distribution.*—Great Britain (Devonshire to Perthshire). Widespread in Europe.

***Hydropsyche lepida* (Pict.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (common in the Killarney and Muckross districts). Cork (Mallow). Waterford (Lismore and Cappoquin). **C.**—Galway (Cong; Lough Corrib near Galway). **L.**—Wexford (Edenvale). Dublin (Lucan). Westmeath (Shannon). **U.**—Donegal (Lennan Bridge).

*Distribution.*—Great Britain (Devonshire to Lanarkshire at least). Probably in most of Europe, except the south of Italy, Greece, and the Mediterranean Islands (*McLachlan*).

***Diplectrona felix* (McLach.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Torc; Horse's Glen; Coppagh Glen; Gap of Dunloe). **C.**—Galway (Maam River). **L.**—Wicklow (Enniskerry). **U.**—Antrim (Cave Hill). Donegal (Lough Reelan).

*Distribution.*—Great Britain (Cornwall to Inverness). Germany; Saxony; Guernsey; France; Iberian Peninsula; central Italy.



**Philopotamus montanus** (Donov.).

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Devil's Punch-bowl; Tore Cascade; Horse's Glen; the Glen in Deer Park; Gap of Dunloe; Kenmare). Waterford (Salterbridge near Cappoquin; Glenshelane). **C.**—Galway (Castlekirk; Maam River; Clonbrock). Mayo (Clare Island; streams on Croagh Patrick; Carrowbeg River; Inishbofin). **L.**—Wexford. Wicklow (Enniskerry). Dublin (Howth and Tibbradden). **U.**—Donegal (Ardara; Loughs Reelan and Salt). Antrim (Colin Glen).

*Distribution.*—Great Britain (in suitable localities from Cornwall to the Shetlands; St. Kilda). Isle of Man. Lapland to Spain, and northern Italy.

Var. **scoticus** McLach.

MUNSTER.

**M.**—Kerry (Killarney, *Hardy*; stream at Cloghereen, *King*).

Occurs in large numbers along the banks of a swiftly-flowing stream and a small spring in this locality, the waters of both being very cold even during August. No example of the type form could be found in this locality, although it was common on almost every stream in the district.

*Distribution.*—This well-marked variety has occurred at Rannoch in Scotland, and in north Wales, as well as at Killarney.

**Wormaldia occipitalis** (Pict.).

MUNSTER. CONNAUGHT. ULSTER.

**M.**—Kerry (Tore Cascade; Cloghereen; Horse's Glen; Gap of Dunloe; Dinish). Cork (Glandore). **C.**—Mayo (Clare Island; Carrowbeg River in Westport demesne). **U.**—Donegal (Clonkillybeg; Coxtown).

*Distribution.*—Great Britain (ranges from Cornwall to Inverness; not uncommon, especially in the north and west of England, *McLachlan*). Germany (East Prussia; Black Forest; &c., *Ulmer*; Saxony). Austria; Switzerland; Guernsey; France; Spain; and Greece.

**Wormaldia mediana** McLach.

LEINSTER.

**L.**—Wicklow (Enniskerry, *King*).

*Distribution.*—In Great Britain this species has been found at Pitlochry in Perthshire, and at Strathglass in Inverness. Abroad it inhabits parts of central and southern Europe—Hungary; central Italy; Portugal; and Sicily. *Ulmer* does not include it in the German fauna (1909).

***Wormaldia subnigra* McLach.**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Cloghereen; Tore Cascade; Gap of Dunloe). Waterford (Glenshelane; Salterbridge near Cappoquin). **C.**—Galway (Maam River). Mayo (Croft Lough; Carrowbeg River). **L.**—Wexford (Edenvale). Dublin (Lucan demesne). **U.**—Donegal (Clonkillybeg).

*Distribution.*—Great Britain (Devonshire and Surrey to Inverness). Isle of Man. Abroad it is found in Finland; Sweden; Denmark (*Petersen*); Germany (*Ulmer*); Switzerland; Saxony; Austria; and Holland.

***Chimarrha marginata* (L.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle; Flesk River; Gap of Dunloe; Dinish). Waterford (River Blackwater near Lismore). **C.**—Galway (*Haliday* ms.; Lough Corrib, near Galway). Mayo (Carrowbeg and Newport Rivers). **L.**—Wexford (Edenvale). Dublin (Lucan demesne). **U.**—Donegal (Bundoran; Ardara; River Lennan; Cottian). "Ireland, amongst waterfalls" (*Hagen, Entom. Annual*, 1860).

Common in suitable localities.

*Distribution.*—Great Britain (Devonshire to Inverness at least). Northern and central Europe, extending from Finland to Portugal.

***Neureclipsis bimaculata* (L.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Killarney; Horse's Glen; Dinish; Gap of Dunloe). Cork (lakes near Glandore). **C.**—Galway (Lough Corrib at Galway; Shannon near Athlone). Mayo (Knappagh and Mount Brown Loughs). **L.**—Dublin (abundant, *McLachlan*). Westmeath (Coosan Point and Twy Lough). **U.**—Donegal (Gorteen Lough).

*Distribution.*—Great Britain (*McLachlan* reports this as a common species, but there are few records. It ranges north at least to Perthshire). Widely distributed in Europe, extending to Lapland. Also occurs in western Siberia and North America (Hudson's Bay, Slave Lake). Only the one species of *Neureclipsis* has been described up to the present time.

***Plectrocnemia conspersa* Curt.**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Cloghereen; Devil's Punch-bowl). **C.**—Mayo (Clare Island; Carrowbeg River). Sligo (near Sligo; Lough Gill). **L.**—Westmeath

(Ballykeeran ; Shannon near Athlone ; Waterstown). **U.** — Donegal (Coolmore ; Lough Reelan ; Glenbeagh). Armagh (Armagh district ; Poyntzpass).

*Distribution.*—Great Britain (Devon to north Shetlands). Isle of Man. Widely distributed in Europe from Russian Lapland to the Färöes ; Spain ; Corsica ; &c.

**Plectrocnemia geniculata** McLach.

**MUNSTER. ULSTER.**

**M.**—Kerry (Horse's Glen). **U.**—Donegal (Lough Reelan). Armagh.

*Distribution.*—Great Britain (local ; Cornwall to Rannoch. St. Kilda). Isle of Man. Guernsey ; Switzerland ; Belgium ; Germany ; France ; Austria ; Spain ; Northern Italy ; Corsica.

**Polycentropus flavomaculatus** (Pict.).

**MUNSTER. CONNAUGHT. LEINSTER. ULSTER.**

**M.**—Kerry (common in the Killarney and Muckross districts ; Devil's Punch-bowl ; Kenmare ; &c.) Waterford (Cappoquin). **C.**—Galway (Castle-kirk, Maumwee Loughs). Roscommon (Yew Point). Mayo (Clare Island ; Mount Brown and Broad Loughs ; Newport and Carrowbeg Rivers ; Achill Island). **L.**—Wexford (Edenvale ; Johnstown Castle grounds). Dublin (Lucan demesne ; Tolka at Glasnevin). Westmeath (Coosan Point ; Ballykeeran ; Waterston ; Shannon at Athlone ; Killinure ; Hare Island ; Twy Lough). **U.**—Monaghan (Glaslough). Donegal (Kilmacrennan district ; Lough Fern ; &c.). Armagh (Coney Island in Lough Neagh, &c.). Antrim (Colin Glen).

*Distribution.*—Great Britain (Cornwall to Shetlands, and Outer Hebrides). Isle of Man. Probably distributed over most of Europe from Lapland to Corsica (*McLachlan*).

**Polycentropus multiguttatus** Curt.

**MUNSTER. CONNAUGHT. LEINSTER. ULSTER.**

**M.**—Kerry (common in the Killarney district ; Gap of Dunloe ; Tore ; &c.) Waterford (Glenshelane near Cappoquin). **C.**—Galway (near Maam). Roscommon (Summerhill). Mayo (Knappagh, Prospect, and Mount Brown Loughs ; Carrowbeg River). **L.**—Dublin (Lucan). Westmeath (Shannon and Ballykeeran). **U.**—Monaghan (Glaslough). Donegal (lakes and streams in the Kilmacrennan district).

*Distribution.*—Great Britain (common, extending to Perthshire). Widely distributed in Europe.

**Polycentropus Kingi** McLach.

MUNSTER. CONNAUGHT. ULSTER.

**M.**—Kerry (Torc Cascade; Glena; Horse's Glen; Gap of Dunloe).  
**C.**—Mayo (Carrowbeg River). **U.**—Antrim (Colin Glen).

*Distribution.*—Great Britain (North Wales and Lake District to Inverness). Isle of Man (*Morton*); Switzerland (*Felber*); Portugal and Sardinia (*McLachlan*).

**Holocentropus dubius** (Ramb.).

MUNSTER. CONNAUGHT. ULSTER.

**M.**—Kerry (Lough Crineaum). Cork (lakes near Glandore). **C.**—Mayo (Knappagh and Cushinsheeaun Loughs). **U.**—Monaghan (Glaslough).

*Distribution.*—Great Britain (local; Dorset to Inverness.). Northern and central Europe.

**Holocentropus stagnalis** (Albarda).

CONNAUGHT. ULSTER.

**C.**—Mayo (Doogan Lough, *King*). **U.**—Armagh (Lowry's Lough, *Johnson*, *vide McLachlan*).

A *Holocentropus*, evidently of this species, was taken at Doogan Lough.

*Distribution.*—Great Britain (range not ascertained; occurs in Suffolk and Worcestershire). Holland and Germany.

**Holocentropus picicornis** (Steph.).

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle; Horse's Glen; Torc; Gap of Dunloe; Kilbrean Lough; Glena; Parknasilla; near Kenmare). **C.**—Galway (Maumwee Lough). Mayo (Clare Island; Cushinsheeaun, Prospect, Knappabeg, and Doogan Loughs). Roscommon (Summerhill). **L.**—Dublin (River Dodder near Dublin; Santry demesne). Westmeath (Shannon; Coosan). **U.**—Monaghan (Glaslough and Emyvale). Donegal (Loughs Keel, Askerri, Mnafin, and Gorteen). Armagh (Lowry's Lough, &c.).

Mr McLachlan records a variety of this species taken by Col. Yerbury at Parknasilla in July, 1901. At first sight it resembled a small *Silo* or large *Beraea*; but examination proved it to be a *Holocentropus*, with no structural characters to distinguish it from *H. picicornis*. The wings are totally black, with the pubescence of the anterior slightly rusty; and the antennae are without annulations (*Entom. Monthly Mag.*, (2) xiii, p. 112).

*Distribution.*—Great Britain (Devon to Perthshire). Abroad it is found from Lapland to Hungary.

***Cyrnus trimaculatus* (Curt.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Killarney and Muckcross districts; Devil's Punch-bowl; Gap of Dunloe, &c.). **C.**—Galway (Castlekirk; Maumwee Lough). Roscommon (Summerhill and Yew Point). Mayo (Achill; lakes and streams in the Westport and Newport districts). **L.**—Wexford (Johnstown Castle grounds). Dublin (Lucan). Westmeath (Coosan; Wineport; Bog of Allen). **U.**—Monaghan (Glaslough and Emyvale). Armagh (Maghery, Lough Neagh). Donegal (Ardara; common in the Kilmacrennan district). Down (River Lagan).

*Distribution.*—Great Britain (widespread, extending to the Shetlands). Generally distributed over most of Europe. Not recorded from Spain.

***Cyrnus flavidus* McLach.**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Gap of Dunloe). **C.**—Galway (Maumwee Lough). Mayo (Knappagh and Prospect Loughs). **L.**—Westport (Coosan Point). **U.**—Armagh (Lowry's Lough). Donegal (Loughs Fern, Sproule, Mnafin, &c., in the Kilmacrennan district; Ardara).

*Distribution.*—Great Britain (local; Kent to Strathglass). Finland; Norway; Russia; Holland; Denmark; Switzerland; Germany.

***Ecnomus tenellus* (Ramb.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle and Ardagh Lough). **C.**—Mayo (Doogan, Prospect, Doo, and Knappagh Loughs). **L.**—Westmeath (Wineport and Waterstown). **U.**—Monaghan (Glaslough and Emyvale).

*Distribution.*—Great Britain (local, *McLachlan*; has not been found in Scotland). Widely spread in Europe; Asia Minor; Turkestan.

***Tinodes Waeneri* (L.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (frequent in the Killarney district; Gap of Dunloe; &c.; near Kenmare; Loo Bridge). Cork (lakes near Glandore). **C.**—Galway (Maumwee Lough; Maam River; Castlekirk). Mayo (lakes and streams in the Westport and Newport districts). **L.**—Wexford (Johnstown Castle grounds). Wicklow (Lough Dan). Dublin (Lucan; mountain streams). Westmeath (Shannon; Coosan; Wineport; Bog of Allen). **U.**—Monaghan

(Glaslough). Armagh (Camlough). Donegal (Loughs Keel, Salt, Fern, and Reelan; Glenbeagh; Largy River; Clonkillybeg).

*Distribution*.—Great Britain (Cornwall to North Shetlands). Common all over Europe.

***Tinodes aureola* (Zett.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Gap of Dunloe; Tore; The Glen in Deer Park; Spa Well; Flesk River). **C.**—Galway (Maam River). Mayo (Prospect Lough). **L.**—Dublin (Howth). Westmeath (Shannon). **U.**—Monaghan (Emyvale).

*Distribution*.—Great Britain (local, though widespread; Kent, Yorkshire, Glasgow, St. Kilda, &c.). Lapland; Germany (Schlesien, *Ulmer*); Austria (Silesia); Switzerland (*Ris*); Italy; Sicily; Corsica; and probably overlooked in other localities.

***Tinodes maculicornis* (Pict.).**

LEINSTER. ULSTER.

**L.**—Westmeath (Coosan Point; Wineport; Glassan; Twy River). **U.**—Monaghan (Glaslough). Donegal (Lough Reelan).

Probably more widely spread than these records indicate. Mr. Morton found this species at Glaslough along with *Tinodes Waeneri*, which swarmed, by beating the bushes surrounding the lake.

*Distribution*.—Has not been observed in Great Britain. The continental range has not been ascertained, but it is known to occur in Switzerland (Geneva); France (Montpellier; Seine below Rouen); and Portugal (Cintra, *McLachlan*). Apparently not recorded from Germany.

**\**Tinodes unicolor* Pict.**

ULSTER.

**U.**—Donegal (Coolmore, *fide McLachlan*).

Taken by the Rev. W. F. Johnson on the banks of a small stream at Coolmore amongst *Iris*, *Epilobium*, &c., in company with *Agapetus fuscipes* (*Entom. Monthly Mag.*; (2), v., p. 236, 1894).

*Distribution*.—Great Britain (Folkestone and Miller's Dale, Derbyshire, *McLachlan*). Germany (Black Forest, *Ulmer*). Switzerland (Geneva, *Pictet*). France, and probably Austria (*McLachlan*).

***Lype phaeopa* (Steph.).**

MUNSTER. CONNAUGHT. ULSTER.

**M.**—Kerry (Ross Castle). **C.**—Mayo (Prospect Lough). **U.**—Monaghan (Glaslough).

*Distribution*.—Great Britain (Devonshire to the south of Scotland). Generally distributed over Europe.

***Lyte fragilis* (Pict.).**

CONNAUGHT. LEINSTER.

**C.**—Galway (Lough Corrib near Galway). Roscommon (Yew Point and Summerhill). **L.**—Westmeath (Coosan Point; Shannon side; Hare Island).

All of the available records of this species are from central Ireland.

*Distribution*.—Up to the present time *Lyte fragilis* has not been observed in any part of Great Britain. It is apparently a local species on the Continent. McLachlan mentions the following localities:—Switzerland (Geneva, *Eaton*; Zurich, common on walls, *Bremi*); south France (Hyères, *Hagen*). Navás has recently recorded it from Albarracin in north-eastern Spain.

***Psychomyia pusilla* (Fab.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Flesk and Deenagh Rivers; Torc Cascade; Gap of Dunloe). Waterford (Lismore and Cappoquin). **C.**—Roscommon (Summerhill). **L.**—Wexford (Edenvale). Wicklow (Enniskerry). Dublin (Lucan). Westmeath (Wineport; Coosan; Ballykeeran). **U.**—Monaghan (Glaslough and Emyvale). Donegal (Kilmacrennan district; Lennan Bridge; Cottian; &c.). Armagh (Coney Island in Lough Neagh).

*Distribution*.—Great Britain (Devonshire to Inverness). Common in Europe, ranging from Spain northwards to Finland.

**RHYACOPHILIDAE.**

***Rhyacophila dorsalis* (Curt.).**

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Flesk and Deenagh Rivers; Torc Cascade; Cloghereen; Horse's Glen). Cork (Blarney). Waterford (Glenshelane). **C.**—Galway (Maam River; Lough Corrib near Galway). Mayo (Carrowbeg River). **L.**—Wexford (Edenvale). Wicklow (Enniskerry). Dublin (Lucan demesne). Westmeath (Ballykeeran). Louth (Omeath). **U.**—Tyrone (Altadiawan). Donegal (Ardara; Loughs Reelan and Keel; Glenbeagh; Clonkillybeg; Lennan Bridge; &c.). Antrim (Colin Glen).

*Distribution*.—Great Britain (Cornwall to North Shetlands); Isle of Man. Widespread in western Europe. Färöes; Germany; Switzerland; Holland; Belgium; France; Spain.

**Glossosoma vernale** (Pict.).

MUNSTER. LEINSTER.

**M.**—Kerry (Ross Castle; Flesk and Deenagh Rivers; Tore Cascade; the Glen in Deer Park; near Kenmare). Waterford (Cappoquin and Glenshelane).

*Distribution.*—Great Britain (not uncommon in hilly districts, *McLachlan*; Devon to Inverness). Widely spread in Europe, ranging from Finland to Spain.

**Agapetus fuscipes** Curt.

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Flesk and Deenagh Rivers; Muckcross; Tore Cascade; Horse's Glen; Spa Well; Gap of Dunloe). **C.**—Galway (Maam River). Mayo (Carrowbeg River). Sligo (near Sligo). **L.**—Wexford (Johnstown Castle grounds). Dublin (Howth). **U.**—Donegal (Loughs Keel and Salt; Clonkillybeg; Coolmore). Antrim (Cave Hill).

*Distribution.*—Great Britain (Cornwall to North Shetlands). Denmark; Germany; Belgium; Guernsey; Switzerland; France; Spain; Corsica.

**Agapetus comatus** (Pict.).

MUNSTER. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle; Deenagh River; Ardagh Lough; Valentia? *McLachlan*). Waterford (Glenshelane). **L.**—Wexford (Edenvale). Wicklow (Enniskerry). Dublin (Lucan demesne). Westmeath (Ballykeeran and Coosan Point). **U.**—Donegal (Largy and Lennan Rivers). Antrim—("ciliatus Lough Neagh," *Haliday* ms.).

*Distribution.*—Great Britain (local; Devonshire to Perthshire, *Morton*). Finland; Russian Lapland; Denmark; Switzerland; Belgium; Germany; Austria. Not recorded from Spain.

**Agapetus delicatulus** McLach.

MUNSTER. LEINSTER.

**M.**—Kerry (Deenagh River; Tore Cascade; Horse's Glen). **L.**—Wexford (Johnstown Castle grounds).

*Distribution.*—Great Britain (very local; recorded from Arran, off the west coast of Scotland, though it probably awaits discovery in other places). The species seems equally rare on the Continent; the only locality mentioned by *McLachlan* is in the Pyrenees.



## HYDROPTILIDAE.

*Agraylea multipunctata* Curt.

MUNSTER. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle and Dinish). Waterford (Cappagh Lough).**L.**—Westmeath (Coosan Point). **U.**—Monaghan (Glaslough).*Distribution.*—Great Britain (common; Devonshire to the Clyde district). Northern and central Europe.*Hydroptila sparsa* Curt.

MUNSTER. CONNAUGHT. LEINSTER.

**M.**—Kerry (Ross Castle; Deenagh River; Cloghereen; Horse's Glen; Gap of Dunloe). **C.**—Mayo (Carrowbeg River; Mount Brown Lough; Cushinsheeaun Lough). **L.**—Dublin (River Tolka). Westmeath (Twy River).*Distribution.*—Great Britain (south of England to the Shetlands). Finland to Italy and Algeria.*Hydroptila femoralis* Eaton.

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Horse's Glen; Gap of Dunloe; Ross Castle; Deenagh River; Cloghereen). **C.**—Roscommon (Summerhill). **L.**—Westmeath (Glassan and Twy River). **U.**—Monaghan (Glaslough). Donegal (Dunleury and Salt Loughs; Gweedore; River Lennan).*Distribution.*—Great Britain (Scotland and north of England). Sweden (*McLachlan*). Lapland and Finland (*Sahlberg*); Denmark (*Petersen*); Germany (Hamburg and Odenwald, *Ulmer*); Switzerland (*Felber*); Italy (Lago di Como, *Eaton*).*Hydroptila forcipata* Eaton.

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Flesk River; Horse's Glen; Gap of Dunloe). **C.**—Roscommon (Summerhill). **L.**—Westmeath (Glassan). **U.**—Monaghan (Glaslough). Donegal (Largy River).*Distribution.*—Great Britain (the few records there are of this species show that it ranges from Devonshire to Inverness). Germany (Hesse, *Ulmer*); Switzerland (*Felber*); Italy (Turin).*\*Ithytrichia lamellaris* Eaton.

ULSTER.

**U.**—Monaghan (Glaslough, *Morton* in *Entom. Monthly Mag.*, xxviii., p. 301, 1892).

Occurred on the Blackwater River at Glaslough.

*Distribution*.—Great Britain (Hants, Derbyshire, north Wales, Strathglass, &c.). Finland (*Sahlberg*). Germany (many localities, *Ulmer*). Hungary (*McLachlan*). Switzerland (*Eaton*). Basses Pyrénées (♀ ♀ possibly this species, *Eaton*).

*Oxyethira costalis* (Curt.).

MUNSTER. CONNAUGHT. LEINSTER. ULSTER.

**M.**—Kerry (Ross Castle; Deenagh River; Cloghereen; Horse's Glen; Coppagh Glen; Gap of Dunloe). **C.**—Galway; (Castlekirk; Maumwee Lough). Roscommon (Summerhill; Yew Point). Mayo (Mount Brown, Cushinshean, Knappagh, Prospect, and Ballin Loughs). **L.**—Dublin (Lucan; Tolka). Westmeath (Glassan; Twy River; Shannon Side). **U.**—Donegal (Loughs Keel and Fern).

*Distribution*.—Great Britain (south of England to north Shetlands). Northern and central Europe.

NOTE ADDED IN PRESS.

ADDITIONAL NOTES ON THE EUROPEAN DISTRIBUTION OF TRICHOPTERA.

The additional European stations subjoined are taken from Petersen's paper "Trichoptera Daniae," (Entom. Meddelelser, (2) III, 1907; and Felber's "Die Trichopteren von Basel . . .," Archiv fur Naturgeschichte, 74 Jahrg., 1908. These papers have only come into our hands since the foregoing pages were in type.

*Phryganea obsoleta* (Hagen) McLach.—Denmark (*Petersen*).

*Limnophilus xanthodes* McLach.—Denmark (*Petersen*); Switzerland (*Felber*).

*Limnophilus fuscinervis* Zett.—Denmark (*Petersen*).

*Limnophilus nigriceps* (Zett.).—Denmark (*Petersen*); Switzerland (*Felber*).

*Limnophilus hirsutus* Curt.—Denmark (*Petersen*); Switzerland (*Felber*).

*Limnophilus luridus* Curt.—Denmark (*Petersen*).

*Micropterna sequax* McLach.—Denmark (*Petersen*).

*Chaetopteryx villosa* (Fab.).—Denmark (*Petersen*).

*Apatania fimbriata* (Pict.).—Switzerland (Alps, *Felber*).

*Silo nigricornis* (Pict.).—Denmark (*Petersen*).

*Crunoecia irrorata* (Curt.).—Denmark (*Petersen*).

**Leptocerus senilis** (Burm.).—Denmark (*Petersen*); Switzerland (Zürich, *Felber*).

**Leptocerus albo-guttatus** Hagen.—Denmark (*Petersen*); Switzerland (Rheinau, *Felber*).

**Leptocerus annulicornis** Steph.—Denmark (*Petersen*); Switzerland (*Felber*).

**Leptocerus dissimilis** Steph.—Denmark (*Petersen*); Switzerland (Zürich, &c., *Felber*).

**Triænodes conspersa** (Ramb.).—Switzerland (Bern, &c., *Felber*).

**Adicella reducta** (Steph.).—Denmark (*Petersen*).

**Oecetis furva** (Ramb.).—Denmark (*Petersen*).

**Oecetis notata** (Ramb.).—Switzerland (Rheinau, *Felber*).

**Oecetis testacea** (Curt.).—Denmark (*Petersen*).

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